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Pacific PULP & PAPER Industry

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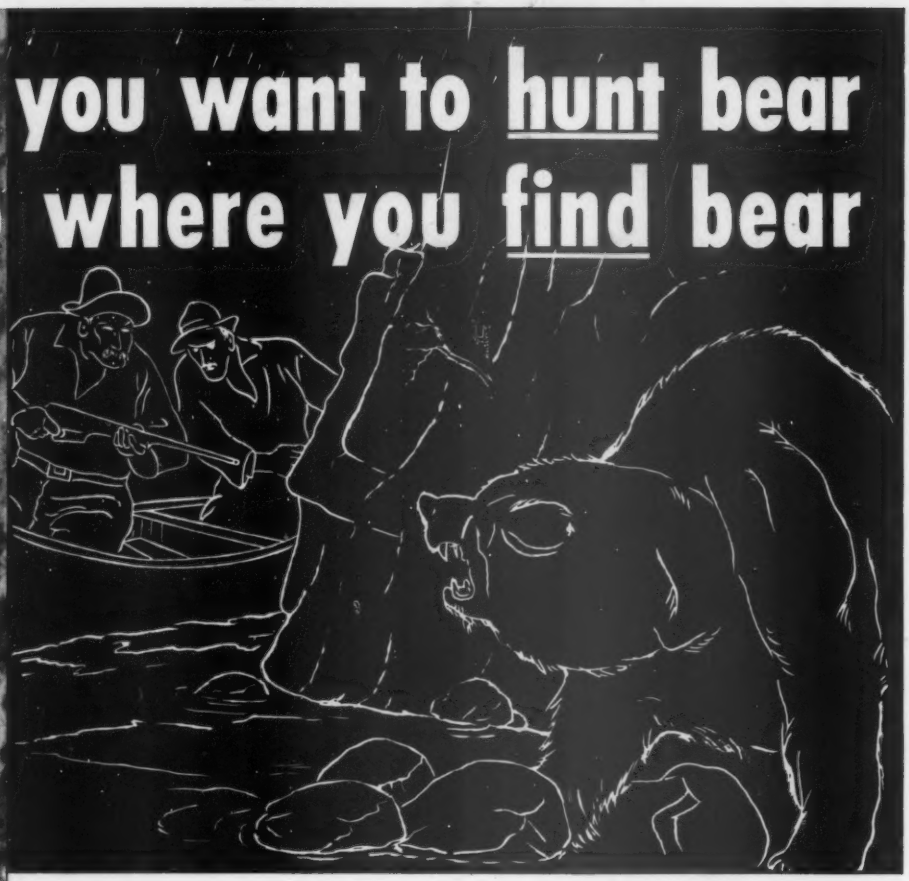

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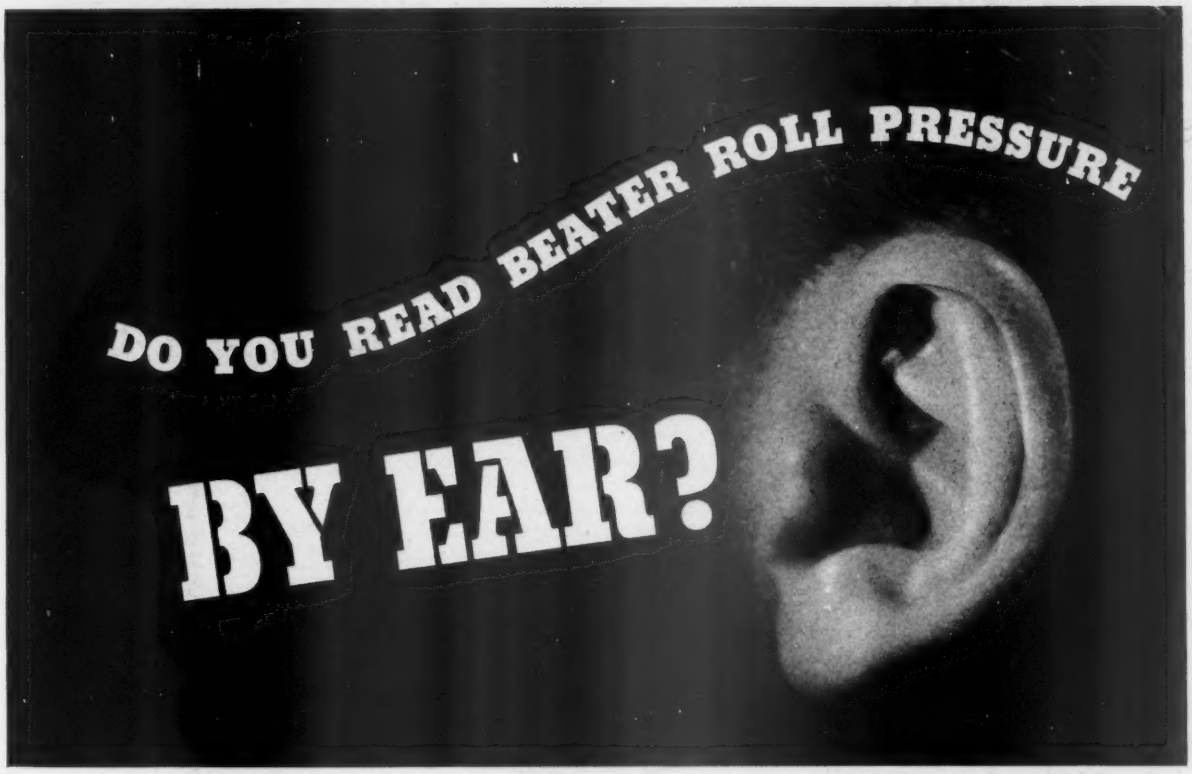

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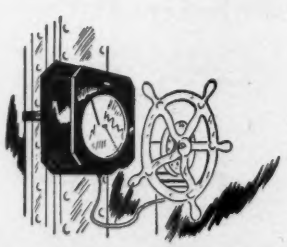

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MILLER FREEMAN
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LAWRENCE K. SMITH
Manager

HARLAN SCOTT
Editor

JOHN E. BROWN
Associate Editor

KEMPER FREEMAN
Production Manager

MILLER FREEMAN, JR.
Circulation Manager

OFFICES

Seattle

PUBLISHING OFFICE
71 Columbia St.
Tel. MAin 1626

Portland

John E. Brown
1220 S. W. Morrison St.
Tel. AT. 8890

San Francisco

Sam Hawkins
121 Second St.
Tel. GA. 5887

Los Angeles

Calvin D. Wood
124 W. Fourth St.
Tel. MUtual 5857

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Pulp Prices Reduced

Bleached Sulphite Down $10—Unbleached Reduced $7—Market Situation Strengthened

● Late in December domestic wood pulp producers announced a reduction in pulp prices for the first quarter of 1938. The reduction was made to create confidence in the pulp market among converting mills and to keep customers of domestic mills in a competitive position with those who have foreign pulp on hand and still deliverable on contract at prices lower than those prevailing during the last quarter of 1937.

The reduction in prices brings wood pulp back to approximately the price level of the second quarter of 1937. Domestic bleached sulphite pulp of No. 1 quality was reduced $10 per ton from $70 to $60. The price range for domestic bleached sulphite pulp for the first quarter of this year is from $60 to $64 per ton depending upon the grade.

● Domestic No. 1 unbleached sulphite pulp was reduced $7 per ton or from $57 to $50. The range on domestic unbleached sulphite is now from $50 to $52 per ton. These prices are for contract sales only and are quoted on an ex dock Atlantic ports basis.

Bleached soda pulp, domestic, was also reduced $7 per ton, from $65 to $58 per ton.

Reaction to the reduced prices was mixed at first both in the ranks of domestic pulp producers and among the buying paper mills. Some pulp producers felt that a price of $70 per ton was not too high even with the pulp sales at a minimum because of steadily rising costs of production. A larger group believed that prices had to come down because of the reduced demand for pulp, and for the reason that there were large stocks of foreign pulp in warehouses which had been bought at around the $60 price for bleached sulphite. Besides, those paper mills buying domestic pulp at $70 per ton would be at a serious disadvantage in competition with those having bought large quantities of foreign pulp at $60 or with those still possessing foreign contracts at this figure.

● The action of the domestic pulp producers in reducing their prices is obviously of benefit to their customers. It is generally understood that the primary aim of most of the American pulp producers is to keep their customers in a competitive position with those buying foreign pulp.

Paper mills throughout the country who buy pulp differed in opinion as to the advisability of reducing pulp prices, but since the actual reduction has taken place the opinion has become general that the action of the pulp producers was the wise step to take.

Because of rising costs paper manufacturers making a number of different grades had scheduled price increases for late in the fall. However, the drop in business which resulted in a curtailment in the demand for paper, prevented the price increases from being put into effect. Had the higher prices been established the fourth quarter domestic pulp price schedule would not have been out of line.

● Some paper mill buyers of pulp feared that a reduction in pulp prices would result in a drop in the price of paper at a time when an increase was needed. However, the forced curtailment of production by paper and board mills over the entire country tended to steady paper and board prices. It was felt generally by the paper producers that price concessions would not stimulate the buying of paper. Jobbers appeared to be over stocked, having bought heavily through the spring and summer in anticipation of the price increases, some of which materialized and some that did not.

The fourth quarter price position of domestic pulp was further weakened by the reselling of considerable quantities of pulp by paper mills who had bought too heavily in anticipation of increased pulp prices and also in fear of an actual shortage, particularly in bleached sulphite. An apparent shortage of bleached existed during the late spring and summer months. Few anticipated a decline in business volume and to protect themselves against both a shortage and higher prices they bought more than they could consume.

As is now well realized this over buying in many lines besides pulp brought the entire business machine down to the present slow pace.

● During October, November and December the question of pulp prices grew in importance and became a deterrent factor operating against the making of contracts for the first quarter of 1938. Now that this matter has been disposed of and prices stabilized at a common level, both foreign and domestic, it is expected that the pulp market situation will gradually return to a firm basis. The industry does not look to seven-day-week operation in the near future, for such peak operation which was common during the summer was recognized at the time as being abnormal. Steady five or six-day operation will be welcomed.

While the decline in demand for pulp and paper in the United States has been more severe than in any other country, the European markets have slowed up somewhat, having been affected by the American situation. Prices of pulp in Europe have apparently not declined, although there has been some production curtailment recently in both pulp and paper. Prices remain higher than in the United States.

On the New York pulp market foreign pulp is still quoted at prices far higher than for domestic, but these prices are for future delivery, the latter part of 1938 and for 1939, so it is reported. Early in January foreign bleached sulphite of prime quality was quoted in New York for future delivery at from $90 to $100 per ton. Bleached sulphite for resale by overstocked paper mills was offered at from $75 to $80. Easy bleaching sulphite of prime quality was quoted at $75 to $80.

● Prime strong unbleached sulphite was offered at from $70 to $75, while unbleached for resale was quoted at $55 to $60 per ton. Inferior and semi-prime grades of unbleached sulphite was offered at $65 to $70.

Foreign bleached kraft was offered for future delivery at from $90 to $95 per ton. Standard Swedish prime unbleached kraft was offered for resale at $45 to $50 per ton. The same pulp was offered by the producers at $60 to $65 per ton. Swedish kraft of No. 2 quality was offered at $55 to $60.

Pulp offered for resale is for the most part available for spot delivery, although some offers are on future shipments.

It is understood that domestic kraft pulps remain the same as they did not advance in the fall along with sulphites being held down by increasing Southern production. Domestic bleached kraft is not quoted publicly on the New York market.

Whether any contracts for 1938 or 1939 have been made at these prices in recent months between foreign producers and American paper mills is not publicly known, but it is considered by well informed men in the industry as unlikely.

In a story published in New York early in January it was stated that foreign pulp producers do not intend to reduce their quoted prices for the present, but that unquestionably some adjustment in prices will be made in due time. This position is understandable as the foreign producers are selling pulp at higher prices in Europe than in the United States and are quoting higher prices there for future delivery. Their European business is still good. To reduce quoted prices to American consumers would jeopardize their European price structure by further increasing the spread between American and European prices on the same foreign pulp.

Witham Joins Inland Empire

George S. Witham, Jr., has recently been appointed assistant to general manager Chester A. Buckland of the Inland Empire Paper Company at Millwood, according to an announcement by Mr. Buckland.

Mr. Witham, who has been associated with the Crown Willamette Paper Company, Division of Crown Zellerbach Corporation for several years, will have charge of production at Inland Empire.

The Inland Empire mill is running full during January and Mr. Buckland states that orders for the better grades of paper are beginning to pick up.

CONSTRUCTION AT FERNANDINA is moving right along as is shown by this photograph taken December 28th through the courtesy of Clyde B. Morgan, President of the FERNANDINA PULP & PAPER COMPANY, Fernandina, Florida, subsidiary of RAYONIER INCORPORATED » » » Above to the left appears the southwest end of the main buildings, the dock warehouse in the background, the drying machine building and in the foreground the machine shop.

British Capital Interested In British Columbia Project

● British capital is behind a proposed new pulp mill for British Columbia, and A. E. McMaster, formerly general manager and vice-president of Powell River Company, has left on the Berengaria for England to further negotiations.

The British interests involved already have large holdings of pulpwood in the Nimpkish country of northern Vancouver Island and also on the west coast near Nootka. They control Nootka Wood Products, Ltd., at Port Tasis, a sawmill project of which Mr. McMaster was recently named managing director. If the pulp mill scheme materializes, it is probable that the two projects will operate in conjunction, although the mill will probably be located further south. Although no official information has been given out so far, it is understood that Port Alberni is being given favorable consideration.

Port Alberni is already a thriving timber port, the center of operations for Alberni Pacific Lumber Company, one of H. R. MacMillan's big export enterprises, and the west coast activities of Bloedel, Welch & Stewart. Most of the pulpwood would probably be towed down the west coast, although a certain amount of pulp timber would be available from the logging enterprises in the Alberni Canal area which now are concentrating on production of Douglas fir and cedar. The proposed mill would produce a fine grade of sulphite pulp for rayon and similar products.

● Mr. McMaster has long been identified with the pulp and paper industry on this coast, having come west originally with the Whalen brothers when they established the mills at Port Alice, Woodfibre and Swanson Bay that later became the property of the B. C. Pulp & Paper Company. Mr. McMaster was more prominent, however, as vice-president and general manager of Powell River Company. Other prospective sites for the mill mentioned at various times were the north arm of Burrard Inlet near Vancouver and a point near the mouth of the Nimpkish River.

Other British Columbia pulp and paper projects are still in the air. Frank L. Buckley's Prince Rupert scheme is still in abeyance pending a more favorable market for securities.

Steensland Project Alive

● The Steensland interests of Chicago are still in the picture, with plans for a mill in the Prince Rupert area, but they have made no definite progress.

Crown Zellerbach Corporation has been carrying on some surveys of pulpwood limits near Johnston Straits at the north end of Vancouver Island, but it is expected that the timber, if developed, would be used by Pacific Mills, Ltd., and a new mill is not contemplated.

● Owing to the decline in the sulphite market, the air has been a little clearer of pulp mill rumors in British Columbia during the past few weeks, except for the McMaster deal, which is believed to have a good prospect of fruition.

1937 Production Just Below 1936 Percentage

The production ratio reports of the American Paper & Pulp Association show that for the entire year of 1937 the ratio of production to capacity for the American paper industry was 80.8 per cent as compared with 81.3 per cent for 1936 and 70.5 per cent for 1935.

December production was the lowest since 1933 with a percentage of 54.3. December 1936 showed 85.9 per cent; December 1935, 71.2 per cent; and, December 1934, 59.6 per cent.

Powell River Pulp Shipments

After a week's shutdown for mechanical adjustments, Powell River Company's Kamyr machine is again in operation, producing about 50 tons of unbleached pulp daily. The first shipment of 1,000 tons went to London, England, and a similar consignment is now being made up for the same destination.

Great Britain has been the chief customer for this pulp so far, the rest of the output being disposed of in the domestic market. Powell River is now practically the only British Columbia manufacturer of unbleached sulphite, B. C. Pulp & Paper Company having converted its plants practically 100 per cent to the bleached product.

In the center is the screen room, boiler and electrical rooms and in the center foreground is the office building adjoining the machine shop » » » Toward the right is the digester building, the blow pits, the water tower and the Jenssen acid towers under construction » » » Piling is in for the acid plant next to the towers » » » The FERNANDINA bleached sulphite pulp mill will be ready by midyear to produce 180 tons per day of dissolving pulps.

Powering the Pabco Plant

by JAMES T. COLEMAN

THE period after the World War has revolutionized all of our ideas of power plants. Let us contrast the pre-war with the later post-war power plants.

Today the modern boiler plant keeps its boilers in uninterrupted service for a year between what used to be called "boiler cleanings." Nowadays the "cleaning" is not a task of scale removal, boring out of tubes, renewing tubes, cleaning mud drums and anxiously inspecting pet corroded areas. For in these post-war days the up to date boiler is fed on nothing but distilled water —even the best of city water must first have its calcium and magnesium salts removed chemically and then be distilled before it can be fed to a modern boiler.

In former years a "boiler room" might be ten or twelve feet high if no more head room could be had; and in such a restricted space some two or three hundred or even at a pinch a thousand horsepower could be generated. A ten year old boy could not walk upright in the furnaces without bumping his head against the lower row of tubes—or if the boilers were of the fire tube type the headroom in the furnaces was even less.

● Today a comparatively small boiler is fifty feet high from the furnace floor to the top of the setting. The furnace itself may be twenty-five feet high to the bottom row of tubes—high enough and incidentally large enough for two rooms with twelve foot ceilings! But the boiler is not permitted to end at a height of fifty feet—there must be about twenty-five feet of additional height for air handling equipment —for no boiler in these stream lined days could be permitted to take in ordinary air by natural draft and to discharge its smoke—or products of combustion—into a common pre-war "stack."

These features are typical of the power plant of The Paraffine Companies, Inc. But before describing that plant in detail it may be necessary to relate the history of some of the former power equipment used by The Paraffine Companies, Inc.

Pabco Products was one of the first two industrial organizations on the Pacific Coast to install high pressure steam plants, both of these plants being started in 1930. The Pabco plant is known as a high efficiency plant.

Leland Rosener, consulting engineer of San Francisco, planned, designed and supervised construction of the Pabco power plant.

Historical

IN 1904 the first electrical power equipment was installed by that company. All machines manufacturing roofing, building paper, paint and pulverized minerals were equipped with individual direct current motors; even the deep well pumps supplying the plant water system were motor driven. A 75 k.w. three-wire Westinghouse direct current generator driven by a 1-16x-12-inch McEwen tandem compound engine supplied electrical power. Two small Heine water tube boilers supplied steam for power and for heating numerous asphalt kettles, roofing machine rolls and other equipment. This installation represented the most advanced practice of the day—no other plant making similar products west of the Alleghany Mountains was so well equipped.

In 1905 a felt mill of thirty tons daily capacity was built by the then Paraffine Paint Company. The felt machine had three cylinders and thirty dryers, 36 inches in diameter. The width of the trimmed sheet was 84 inches. Three 200 horsepower Heine boilers — later increased to five — were installed and also a 125 k.w. three wire direct current generator, driven by a 10-20x16 inch McEwen engine (in addition to the former 75 k.w. generator set which was retained in service). The felt machine was driven by a 75 h.p. constant speed D.C. motor with a Moore & White speed changer supplemented by a single additional stepped pulley speed change. It is believed this was the first electrically driven paper—or felt—machine on the Pacific Coast.

JAMES T. COLEMAN
Master Mechanic
The Paraffine Companies, Inc.

● The beaters and the single Jordan and the beater stuff chests were driven by an 18-36x27 inch tandem compound Ball & Wood condensing engine with valves in the cylinder heads. This engine ran at 150 r.p.m. and was rated at about 650 h.p., taking steam at 150 lbs. pressure. The drive was through a direct connected line shaft 95 feet long with belt drive to each beater. Steam from all engines was condensed. Process steam at 150 pounds pressure was used for heating asphalt tanks, kettles and roofing machine rolls. For the felt machine dryers steam was reduced to 40 pounds. All condensate was returned to the power house where the make-up water and return from the condenser served to suppress the flash.

This equipment was in operation for ten years—until 1916. At that time increased plant production (and the addition of a second felt machine in 1917) made it necessary to devote all the boiler capacity to heating. Electric power was accordingly purchased from the local public service corporation. The mill beaters—the heaviest unit of load—were driven by 150 h.p. induction motors, each motor driving two beaters by belt drives. Direct current was supplied by a 300 k.w. motor generating set consisting of a 400 h.p. synchronous motor and a 220-110 volt three wire D.C. generator.

LOOKING DOWN on the operating end of No. 1 boiler in THE PABCO POWER PLANT, Emeryville, California.

In 1925 a 600 h.p. Stirling boiler was added to take care of the increased load due to growing plant output, particularly in the printed felt base floor covering department. This department was constantly increasing its demands on the felt mill for more felt and on the saturating plant and the asphalt refinery for the saturation of that felt, all of which was additional to the increase in drying capacity for drying the print paint on the floor covering itself.

In 1930 a linoleum unit was added to the steadily growing Paraffine Companies plant at Emeryville. Linoleum is a product calling for a comparatively large amount of power as well as heat. The linoleum "mix" is an intimately worked mass of powdered cork, pigment and a stiff "cement" composed of oxidized linseed oil and resin. Heavy ma-

chinery driven by motors of from 50 to 200 horsepower are required to drive the mixers. The "mix" is calendered onto a backing of burlap and the product is hung in festoons in large steam heated "stoves" for a curing period of about three weeks.

A New Power Plant Required

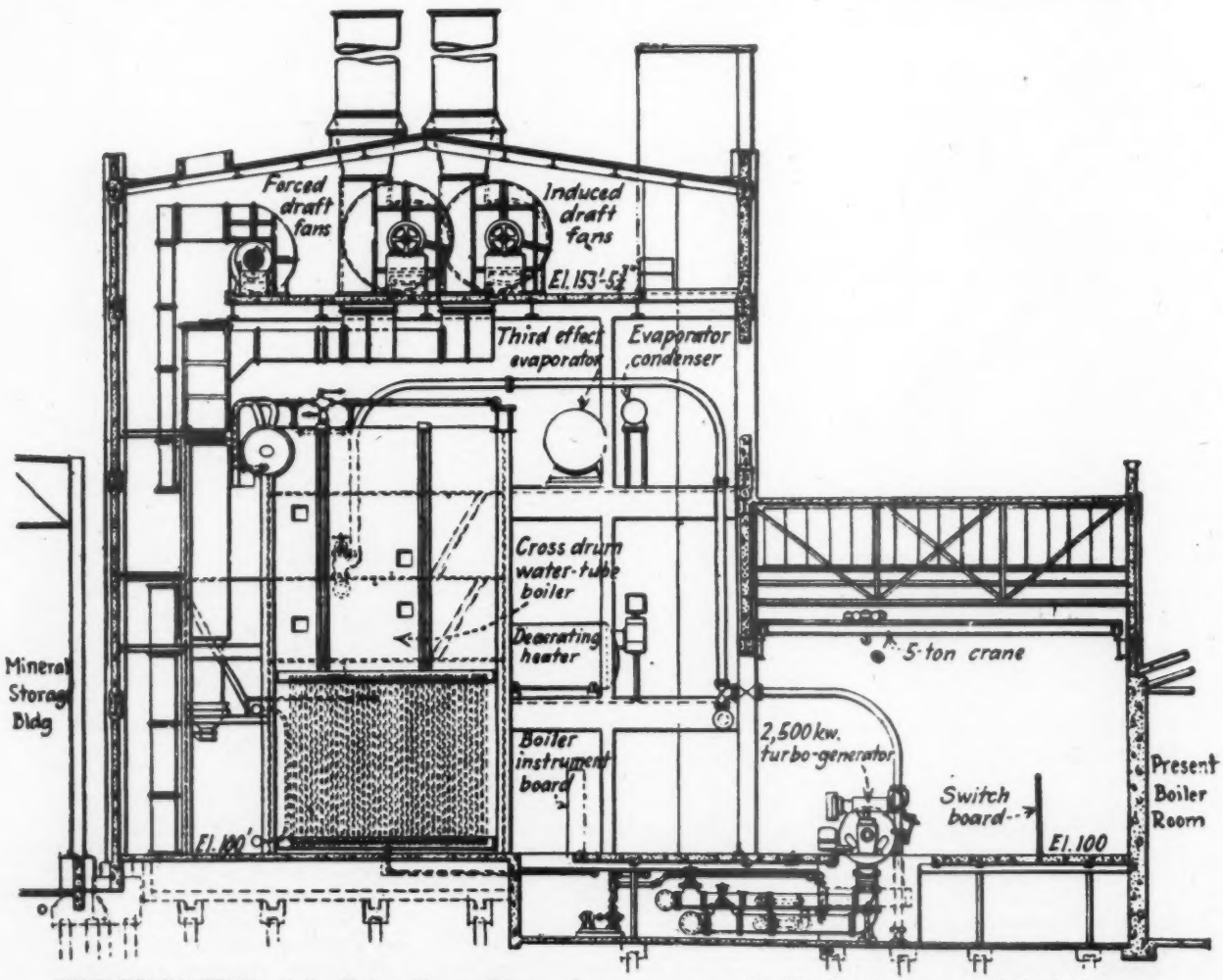
TO meet these added power and heating demands and at the same time to modernize the power plant equipment, some of which was twenty-five years old, a detailed study was made to determine the type of installation best fitted to serve what might be termed a group of manufacturing industries.

Running through all of these studies was the basic idea that a unit would be required for generation of current for the entire electric load and along with this that the process steam should be taken from the steam turbine at 150 and 40 pound pressures which had been the pressures maintained unchanged for the entire preceeding twenty-five years. The bleeding of steam from the original McEwen and Ball & Wood engines had been considered when they were installed in 1905, but at that time the diversification of manufacture was not such as would permit satisfactory balancing between power and heating loads. Even with the larger demand for power and heat existing in 1930 there were still difficulties in establishing a satisfactory balance between the electric power load and the heating load so that, on the one hand, excess steam might not have to be turned into the atmosphere or, on the other hand, large quantities of high pressure steam might not have to be taken direct from the boiler house main and reduced to the pressures in the heating lines.

● The establishment of a leeway in this balance was effected through the installation of a triple effect make-up feed-water evaporator which can be run either as a triple, double or single effect.

It was evident that to be able to supply the 150 pound process steam for a bleeder off the turbine, the initial pressure would have to be sufficiently high to afford a possibility of extracting a reasonable value of power from the bled steam. This determined that the boiler pressure should be between 400 and 500 pounds—the operating pressure selected was 425 pounds.

A study of plant conditions indicated that approximately 22,000 pounds of steam per hour was required at 150 pounds pressure and 54,000 pounds per hour at 40 pounds pressure. This requirement fixed the boiler size at a normal rating of about 25,000 pounds evaporation per hour. Two boilers were installed, either one being able to carry the full plant load without exceeding 500 per cent rating, thus al-



SIDE ELEVATION of the Pabco Power Plant, showing water-walled boiler furnace and draft fans.

lowing for normal increases in demand.

The electric power which can be generated from 22,000 pounds of steam in the drop from 425 gauge pounds (160° superheat) to 150 pounds is approximately 400 k.w. The 54,000 pounds of steam from 425 pounds to 40 pounds will generate approximately 1870 k.w. Thus the approximate size of the turbines generator set is indicated at about 2,500 k.w.

With these main factors outlined the various other pieces of equipment began definitely to fit themselves into place.

Fuel and Purchased Power

THE type of fuel was a primary consideration. The oil refinery of The Paraffine Companies produces sufficient fuel distillate to cary the power plant for a portion of the time. At the same time the Pacific Gas & Electric Company main line (the loop joining the Milpitas and the San Joaquin Valley lines) runs within two blocks of the Paraffine property line. It was natural that gas should be used as the additional fuel instead of the residual fuel oil formerly used. At the present time gas is the main fuel; it is less corrosive than oil, is easier to handle and is more economical. Occasionally oil fuel is used, as in very cold weather when there is a heavy gas demand on the part of other consumers.

Another tie-in with the utility company was necessary—this was a continuation of the former purchases of electric power from the local power company (Great Western Power Company, owned by Pacific Gas and Electric Company). Power requirements in excess of the plant generating capacity are drawn from the utility system and fed into the distributing system of the plant at the generator switch board. At times, as explained below, there is a flow of power from the plant generator back into the utility lines.

The Steam Generating Plant

RETURNING now to the discussion of the power plant equipment, the details of the installation may be taken up in order.

The Babcock & Wilcox boilers were supplied and installed by C. C. Moore & Co., San Francisco. They are of the cross drum type with two banks of tubes. Each boiler has a total of 7,695 square feet of heating surface. They have water wall furnaces with bare tubes on three sides recessed for half their diameter in the refractory lining of the furnaces. The fronts of the furnaces have no water walls as the six burner openings in each furnace take up some nine feet of height of the front wall. The burners are in two banks of three each with the outer burners in each set some four feet from the side water walls. The refractory furnace linings were made by Vitrefrax Corporation, Los Angeles and were furnished, together with the insulation between the refractory and steel outer walls, by the Plant Rubber & Asbestos Works, San Francisco, and installed by J. T. Thorpe & Son. All 85 per cent magnesia pipe covering and blocks, and all high temperature covering and blocks were furnished and installed by Plant Rubber & Asbestos Works of San Francisco.

Superheat is supplied by superheaters of the looped tube type installed between the two tube decks. The tubes from the boiler drum to the superheater header pass through the boiler setting in the hot gas stream leaving the boiler.

Air for the boilers is drawn from the upper portion of the boiler room, thus conserving heat which escapes through settings and insulation. Sturtevant turbovane forced draft fans of 167,000 pounds air capacity per hour (100° F., at 15 inches) force air into counter current heat exchangers, or air preheaters, located at the rear of the boilers. One of these is by Prat-Daniel Corporation, Thermix Type C; the other is a tubular preheater by Babcock & Wilcox. Each is of about 12,250 square feet. The preheaters bring the air temperature up to 350° or 400° F. From the preheaters the air is conducted downward through insulated steel ducts of rectangular section and is carried beneath the furnace floors to the front of the furnaces.

• Outgoing gases are handled by Sturtevant turbovane induced draft fans of 176,000 lbs. air capacity per hour (407° at 9 inches). Both the forced and induced draft fans are located on a "gallery" floor above the boilers. For loads up to 275 per cent of boiler rating the fans are driven by 30 h.p. Westinghouse constant speed motors with draft regulation by dampers. Above 275 per cent boiler load the fans are driven by 150 h.p. variable speed motors. In the case of each of the four fans, both motors are direct connected to the shaft carrying the fan runner. Forced draft dampers are manually operated and are at the inlet to the furnace. Induced draft dampers are electrically operated. All dampers are controlled at panels on the main floor and their position is indicated on panel board indicators.

The stacks, 6 ft. in diameter, are relatively short, rising fifteen feet above the roof, the roof level being substantially at the outlet height of the induced draft fans.

There are automatic fuel cut out valves which operate electrically so that failure of any one of the eight fan motors—that is if it has been carying the load on its connected fan—will shut off the fuel supply to the corresponding boiler. There are also bearing temperature pyrometers wired to the boiler panels and red alarm lights to indicate overheating of fan bearings. The fan motors, being located in a warm atmosphere above the boilers, are cooled by circulating air taken in from above the roof.

Water Handling

THE feed water for the boilers comes from four sources, viz:

1. Make-up water from the municipal water system.

2. Condensate from process heating in the Felt Mill, Refinery, Roofing Plant, Felt Base Floor Covering and Linoleum Plants.

3. Condensate (drip) from steam supplied to evaporators.

4. Extraction heater condensate.

Owing to steam losses and to steam used up in processes, the make-up water amounts to about 25 per cent of that evaporated. The raw make-up water is treated in a zeolite (Permutit) water treating set on the first floor and is pumped at once to the multiple (or single) effect evaporator battery on the third floor, going through, on the way, a heat exchanger through which the evaporator drip (condensate)—No. 3 above—is passing. The water distilled from the evaporators is condensed in two evaporator condensers operating at atmospheric pressure and cooled by salt water from San Francisco Bay. The condensate from the evaporator condensers is dropped into the hot wells on the first floor where it joins the large supply of water (No. 2 above) returning from the process heating throughout the plant, and is also joined there by the condensate (drip) from the evaporators (No.

3 above). The two hot wells are each of 90,000 pounds capacity and carry about four pounds pressure, which does not interfere with the gravity drop to them from the third floor. There is a small amount of flash from the hot wells due largely to the condensate returned from the process heating (No. 2); this is cared for by a small condensing heater which heats the make-up water (No. 1) on its way to the evaporators.

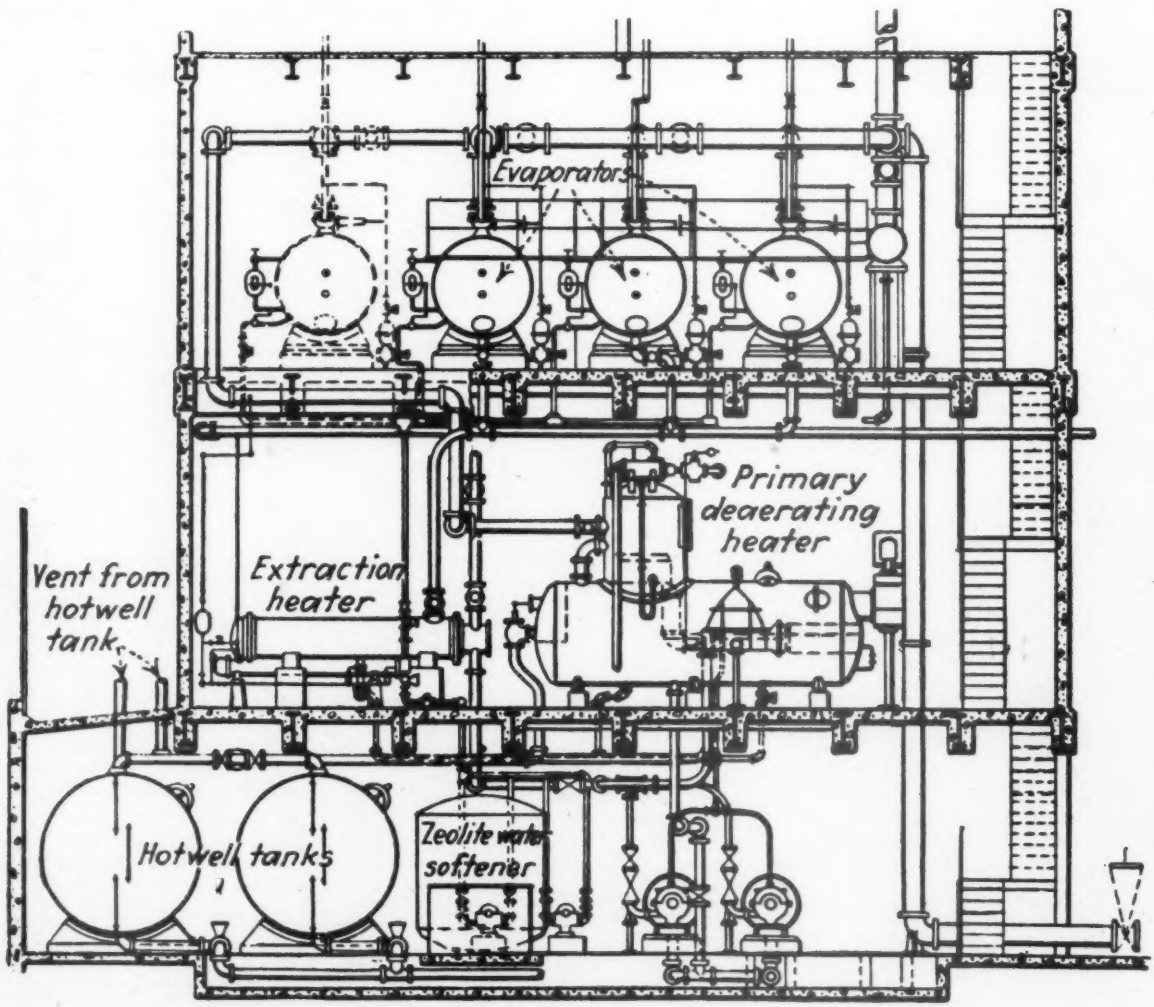
The extraction heater condensate is at about 150 pounds gauge pressure. It would have considerable flash if turned into the hot well and this amount of liberated steam (at 4 lbs. gauge or less) could not be economically saved. Accordingly the condensate is passed through a small condensate cooler, where it is cooled by the discharge from the boiler feed pumps. It then flows, without the aid of a booster pump, into the six stage centrifugal boiler feed pumps between their first and second stages where the pressure is approximately 130 pounds gauge.

Boiler Feed Water

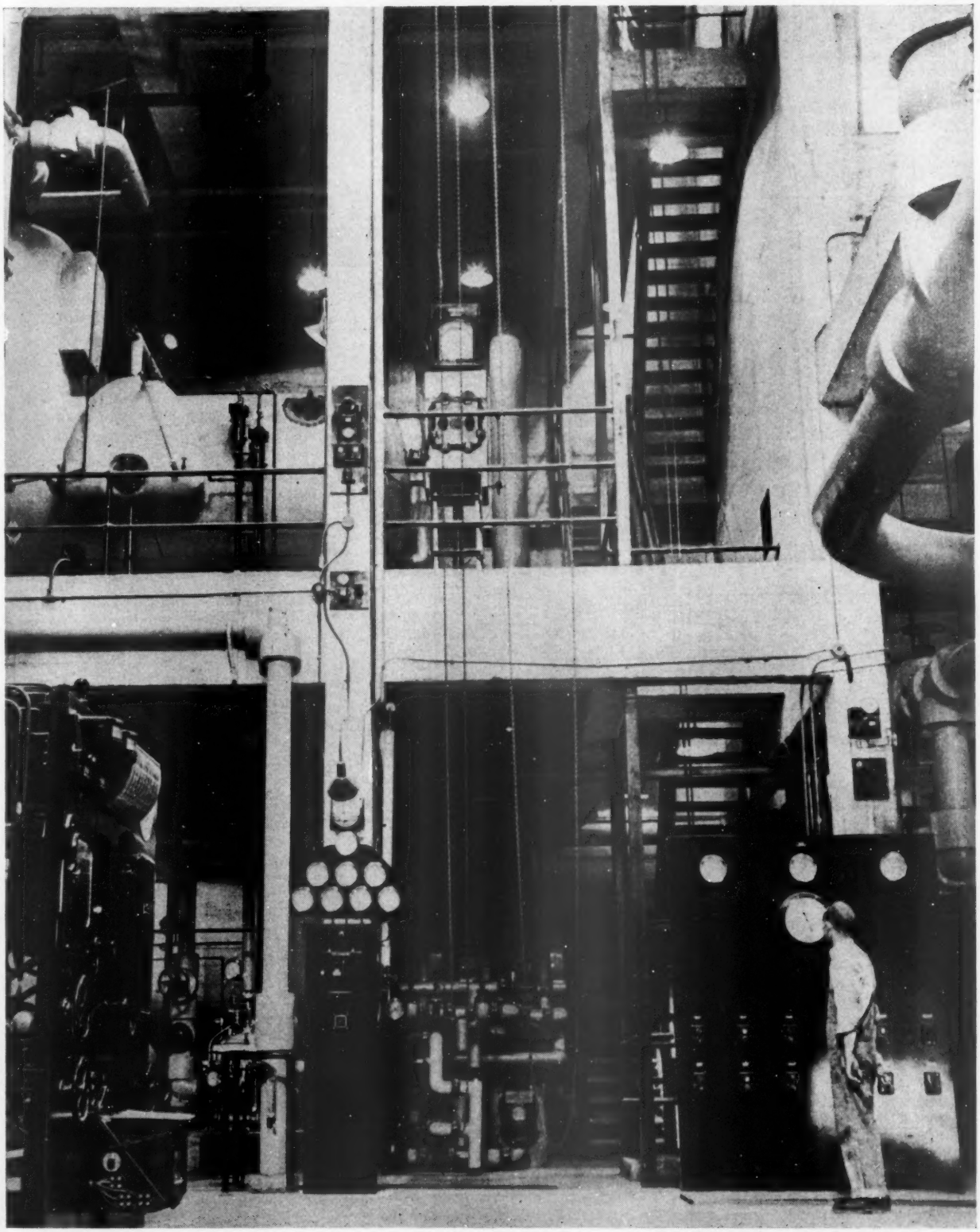
WE now take up the course of the boiler feed water which has been accumulated from its four sources as above outlined. From the hot wells a booster pump raises the water to a deaerating heater on the second floor where it is showered down over baffles and is brought into contact with steam taken from the 40 lb. steam main. Air expelled from the water rises to the top and is vented to the atmosphere. From the base of the deaerating heater the water goes to one or the other of the two six stage Cameron feed pumps. The discharge from these pumps passes successively through the condensate cooler from the extractor heater, and thence through the extractor heater itself where it is heated by 150 lb. steam to 360° F., and then passes directly to the boilers.

Water Treatments

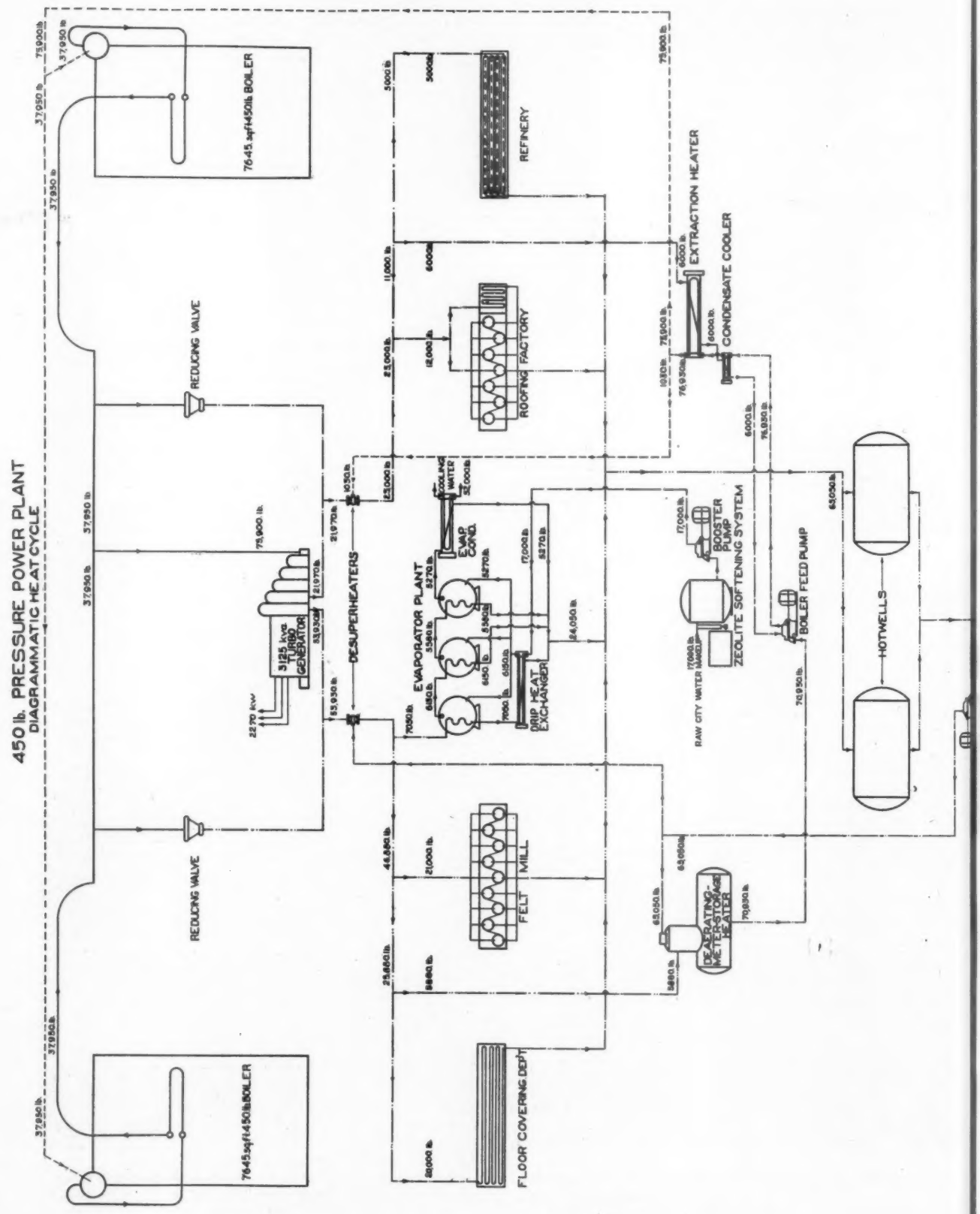
THE usual tests are made on the zeolite treated water from the municipal supply. This is a very pure water, largely from the Sierra Nevada Mountains but mixed with a certain proportion derived from local watersheds. The evaporators are operated until they attain a concentration of total solids of about 1200 to 1400 parts per million. There is some carry over which necessitates after treatment. Without such treatment the soluble salts and other water conditions would cause caustic embrittlement and corrosion—possibly priming. The treatments comprise additions of sodium hydroxide, sodium sulphate, anhydrous trisodium phosphate (Hagan Corporation) and lastly sodium sulphite, this latter serving to combine



ELEVATION, showing Pabco Power Plant auxiliaries on three levels.



PARAFFINE'S POWER PLANT contains modern high pressure steam boilers fired with natural gas » » » CONTROL is obtained through the use of recording and controlling instruments » » » On the balcony at the upper left is a deaerator which removes air from the boiler feed water.


450 lb. PRESSURE POWER PLANT
DIAGRAMMATIC HEAT CYCLE
7645 sq ft 450 lb. BOILER
7645 sq ft 450 lb. BOILER
REDUCING VALVE
REDUCING VALVE
3125 kw. TURBO GENERATOR
2270 KW
DESUPERHEATERS
EVAPORATOR PLANT
EVAP. COND.
COOLING WATER
DRIP HEAT EXCHANGER
REFINERY
ROOFING FACTORY
FELT MILL
FLOOR COVERING DEPT
EXTRACTION HEATER
CONDENSATE COOLER
BOOSTER PUMP
ZEOLITE SOFTENING SYSTEM
RAW CITY WATER HANDLE
BOILER FEED PUMP
HOTWELLS
DEAERATING-METER-STORAGE HEATER

with small amounts of oxygen which have not been taken out by the deaerator. Daily chemical analyses of the contents of each boiler are performed by the plant laboratory.

Treatment of the boilers themselves is a very necessary item. At each annual cleaning the interiors of the drums are painted with Pabco Interior Boiler Paint. Also hot wells, deaerator and evaporator shells are similarly painted. An outstanding feature of this painting with the Pabco Interior Boiler Paint is exhibited in the hot wells which are now seven years old and give promise of ten or more years continued usefulness, the average life expectancy of hot wells of similar construction and under ordinary operation is five years.

The boilers are blown down about once each week—under heavy load twice each week. About 25,000 pounds of water is blown, the boiler contents being about 55,000 pounds. The evaporators are completely emptied once each 24 hours—this runs to waste about 5 per cent of the total water supplied to them.

Steam Distribution

STEAM at 425 pounds pressure and at 630° F. is brought out from the boilers to a main header. This steam is fed directly to the turbine and also is an alternate source for the 150 and 40 pound lines, this source cutting in automatically when the turbine becomes inoperative or when excess demand comes on these lines. The steam for these lines passes through reducing valves and desuperheaters to the respective lines. The 40 lb. desuperheater is supplied with water by the booster pump from the hot well and the 150 lb. desuperheater with water taken from the second stage of the boiler feed pumps. Steam is supplied to the deaerating heater from the 40 pound pressure line.

The turbine, as above stated, is bled at 150 pounds and has a final discharge of 40 pounds. Under ideal conditions the process heating load balances the electrical load. There are a few factors within the control of the power plant which may be used to maintain this balance under a certain range of conditions. The process steam demand governs the electrical output from the turbine. If the process steam demand is excessively heavy the turbo generator will generate full electrical load and some steam may be taken automatically into the 150 pound and 40 pound lines through the reducing valves. If the process steam demand is light and the electrical demand is heavy, as much steam as possible is used in the evaporators, running them single effect. Any further electrical demand must be supplied by drawing from the public service lines. If the electrical demand is light, and the process steam demand is heavy, there is an excess of power generated and this excess is turned back into the public service lines.

Electrical Equipment

THE turbine-generating set and switchboard are in the same building space with the boilers and water handling equipment. A five ton traveling hand crane spans the area devoted to the electrical equipment. There is a basement below this area and the basement extends to the line of the boiler fronts. Besides the steam pipes leading from the turbine this basement contains the incoming fuel lines, the hot well booster pumps and all the auxiliary turbine equipment such as the circulating air cooler and the oil purifying equipment.

The characteristics of the turbogenerator have probably been sufficiently indicated above. The equipment was supplied by General Electric Co. It carries an exciter on the extended shaft. The speed is 3,600 r.p.m.; power is supplied at 2,400 volts, 60 cycles, 3 phase which corresponds to the public service power lines coming into the plant.

The switchboard was furnished by Westinghouse as were the fan motors and other motors in the power house.

Other Electrical Equipment

AS stated above, direct current for plant service is furnished by a 220-110 volt Westinghouse motor generator set with a 400 h.p. synchronous motor and a 300 k.w. 3-wire D.C. generator. This is located in the former power house adjacent to the new power plant and with a ground floor which is level with the new power plant basement. Two motor driven air compressors and a steam fire pump are in this old power plant. The main fire protection unit is a motor driven centrifugal Underwriters' pump in a separate building in the yard. This is the main supply for the sprinkler system.

The area covered by buildings amounts to about 30 acres and involves distances too great to be economically reached by a single source of 220 volt direct current—or, for that matter, by 400 volt alternating current. Several of the larger outlying units are supplied with alternating current at 2,400 volts which is either used at that voltage in motors or is cut down to 440 volts by transformers located at these secondary supply centers. Corresponding outlying demands for 220 or 110-volt direct current are supplied by motor generators at the local demand center. In cases where very finely graduated speed is required Ward-Leonard control is used, the motor generator set usually-though not always—being driven by a synchronous motor.

An outstanding example of Ward-Leonard control is the drive for the second felt machine—a 120-inch machine with a capacity of over 50 tons per day and with vertical dryers. The motor generator set is located in the power house as is also the control panel. The drive is to the variable speed shaft of the felt machine by means of V belts and the push button speed controls are mounted on the front side of the machine.

Motor Drives

IT is interesting to trace the history of some of the drives to various machines. In the beginning, in the eighties, the first roofing manufacturing machines were operated by hand power. In 1892 a small steam plant was installed and a larger roofing machine built—the drive was by a 4″x5″ single cylinder steam engine. Curiously this engine, the first on the premises, is the last steam engine in service; it is now serving as a stand-by drive for a motor driven oil pump in the refinery. The next generation of roofing machines was driven by larger steam engines—then a switch was made to electric motors — the type S Westinghouse D.C. motors with 220-110 volt speed control. The last, and present, generation of roofing machines boasts of one machine with fifteen motors and with numerous electric brakes and air cylinders.

• Besides the credit for individual items of equipment mentioned above, the plant was designed by Leland S. Rosener, consulting engineer, San Francisco. Mr. Hugh T. Byrne was Mr. Rosener's representative at the plant on engineering work and Mr. J. T. Coleman, master mechanic of The Paraffine Companies, was the Company represen-

tative—the plant has been continuously in operation under Mr. Coleman's supervision.

Editor's Note

James T. Coleman, master mechanic at Pabco Products (The Paraffine Companies, Inc.), is a well known Pacific Coast plant executive. Mr. Coleman has been a key man with the large roofing, floor covering, paint and building materials manufacturing firm for almost a quarter of a century.

He is a close student of every aspect of the mechanical and engineering end of manufacturing. He has been in charge of the Pabco power plant since its beginning.

Mr. Coleman is well qualified to discuss power in an industrial plant.

Finnish Expansion Near Limit of Wood Resources

The increase in the manufacture of Finnish paper and pulp has very nearly reached the limit for further expansion, in quantity, according to the executive head of the Finnish woodworking industries in an article in the September issue of the monthly bulletin from the Bank of Finland.

According to available statistics, he states, manufacture of pulp and paper from spruce has slightly exceeded normal supply of raw material while there is still a surplus of pine available for sulphate cellulose and the kraft paper industry. The scales seem to be weighed down rather heavily on the side of overconsumption in spruce and if new sulphate mills under construction at present are taken into account there does not seem to be much room left for a further increase in the output of sulphate cellulose either.

The production limit, this executive points out, is accentuated by the very pronounced rise in the price of pulpwood which, though it may originally be due to the market conditions and the general rise in commodity prices abroad, nevertheless, points to the increased scarcity in the supply of pulpwood—since the beginning of 1936 the price of spruce pulpwood has risen about 100%, causing grave concern in particular to the sulphite pulp and news print industries, which are tied down to comparatively low prices by long-term contracts—in such circumstances, the article concludes, it is not unreasonable that the question should have been mooted of limiting exports of pulpwood to those countries which exclude the products of Finnish paper from their markets by means of excessive trade barriers.

Finnish Expansion Planned for 1938

From the Bank of Finland Bulletin we quote the following:

"The sulphate cellulose mill of Oulu Oy., situated in North Finland, started work in September. The trial period is gradually giving way to regular work. The annual capacity of the mill is 80,000 tons, but already next spring this will be raised to 100,000 tons. In normal conditions the number of workpeople will amount to 400-500. The output for this year and next year has already been disposed of.

"At New Year the new Anajala Paper Mill, built by Tammerfors Linne-och Jern-Manufaktur Ab., will be started. At first the mill will run one papermaking machine and the output will amount to 35,000 tons of paper annually. Soon, however, the output is to be doubled, when the second papermaking machine, already ordered, is installed.

"The work of building Sunila Oy.'s new sulphate mill near the town of Kotka is progressing rapidly. Some of the buildings have already been completed and the machinery began to be installed in September. The first cooker was delivered recently and is said to be the largest wholly welded cooker in the world. Its volume is 140 cub. meters and it weighs 54 tons. Six of these machines are to be installed in the mill."

Finnish Pulp Exports Up 11%

Exports of paper from Finland during the first 9 months of the current year were approximately 20 per cent higher than during the corresponding period in 1936. Proportionately the largest increase occurred in exports of boards which totaled 72,270 tons as against 51,076 metric tons, an increase of 41 per cent. Exports of wrapping papers amounting to 68,414 metric tons were 28 per cent higher than last year. Exports of news print which account for over 60 per cent of the total paper exports, amounted to 285,414 tons, an increase of 14 per cent over a year ago.

Pulp exports were also higher than last year although proportionately not as large an advance occurred here as in the paper branch of the industry. Shipments of chemical pulp were approximately 11 per cent higher than during 1937, this increase being equally distributed between the sulphite and sulphate branches. Total chemical pulp shipments amounted to 861,902 metric tons, of which 604,023 tons represented sulphite and 257,879 tons sulphate pulp. Exports of mechanical pulp amounting to 212,683 metric tons were only 2.4 per cent higher than during 1936.

Finnish Production For 1937

Finnish output of wood pulp for the current year has been reliably estimated at 1,500,000 metric tons and paper and board at 630,000 metric tons, including 400,000 tons of news print and 100,000 tons of paperboard. Production of wood pulp has been divided as follows: sulphite pulp 800,000 tons, sulphate pulp 400,000 tons, and mechanical pulp 300,000 metric tons.

During the past two years 3 large new sulphate pulp mills have been constructed in Finland adding 280,000 tons productive capacity to the industry.

New construction contemplated at the present time includes a news print machine to be added to the Anjala mill, which will be ready for production by January 1939. The first machine ordered by this company with a manufacturing capacity of about 39,000 tons annually, will be ready for production in January of the coming year. The second machine mentioned above will double the mills capacity. The annual output of the Lohjen Selluloosa will be increased to 20,000 tons of kraft pulp per year. The company is also planning the purchase and installation of a machine which will turn out between 6,000 and 7,000 metric tons of kraft paper per year. (American Consulate, Helsinki.)

Increased British Pulp Imports

Imports of wood pulp into the United Kingdom for the 10 months ended October 30, 1937, reached a total of 1,444,789 tons (long ton of 2,240 pounds), this figure representing an increase of 12 per cent over the corresponding period last year. All classes contributed to this gain, the largest increases having occurred in mechanical pulp and bleached chemical pulp. Imports of the various classes during the period mentioned were as follows: dry, unbleached, chemical pulp 158,413 tons; dry, unbleached, chemical pulp 496,337 tons; wet, chemical pulp, bleached or unbleached 181,949 tons (dry weight); mechanical pulp 608,090 tons. Finland supplied 43 per cent, Sweden 29 per cent, and Norway 17 per cent of the 1937 imports. Approximately 2 per cent of this year's imports came from Canada.

Miller Freeman Elected Republican Committeeman

The Republican State Central Committee of Washington unanimously elected Miller Freeman as National Committeeman early in November.

Widely known as publisher of Pacific Pulp & Paper Industry and other technical and industrial journals on the Pacific Coast, Mr. Freeman was selected to represent the State of Washington in national affairs of the Republican Party because of his intimate knowledge of social and economic needs of this region. His acceptance of the position was followed by many expressions of warm approval from citizens in all ranks of business, labor and industry.

MILLER FREEMAN
Washington's Republican National Committeeman

Superintendents Discuss Operating Problems

Stenographic Transcription of the Round Table Discussion, Held in Seattle, Saturday, December 4th, 1937, Is Presented Below.

THE discussion was led by Ray C. Onkels and L. S. McCurdy. Mr. Onkels, chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association for 1937, is general superintendent of the Westminster Paper Mills, New Westminster, B. C. Mr. McCurdy, who was elected chairman for 1938, served as first vice-chairman in 1937. He is paper mill superintendent for the National Paper Products Company Division of Crown Zellerbach Corporation at Port Townsend, Washington.

Cleaning Suction Rolls

● **Question:** What is considered the best method of cleaning accumulated slime in bronze suction rolls, apart from using a punch to punch out of holes by hand?

● **Discussion:** Now would this be a suction press or couch? This most likely refers to suction couch. The only solution that I know to the problem is punching. Do you think sulphuric acid is a good thing to remove it?

I agree that sulphuric acid is a good thing to remove dirt and lime in holes in the suction roll. However, it is detrimental to the suction roll for the simple reason that it leaves little indentations in the rolls and wears the felt faster. That is the only objection.

● I do not mean on the suction press but on the suction couch. I do not know about the suction press.

On the suction couch it does not do any particular harm.

● I don't know who it was but some salesman of a wire company had a solution they used in a pad on the roll but did not say what it was but it cleaned the roll without punching. Oakite 22 but it is a slow process.

How do you use it?

● Build up the pan on the end and close up the drain and make a bathtub out of it and let the roll run slowly, soaking up and blow out with steam.

How long would you soak it?

You would have to soak it for two hours.

● We tried that and it is slower than poking out the holes.

We take the roll out and have it ground which takes fourteen men eight hours to punch out the holes. Sixteen hours down will take care of it. Take the suction box out of the roll and it is faster.

● We poke them out with a punch the size of the hole made of ¾" wire. Seven men on each side of a 150" roll would take seven or eight hours.

Do you use gang punches and multiple punches?

No, we use steel wire the size of the hole and make punches out of that.

The thing that I have found about Oakite is that if the holes are not entirely plugged Oakite will clean them out, but if the holes are plugged Oakite won't clean them.

If the roll is rubber covered then Oakite will work. We have one roll that is rubber covered.

● Do you have as much trouble with rubber covered rolls as uncovered?

We have both and the holes don't plug up with rubber covered. They have enough give and take. Bronze plugs up and you have to drive a hammer in the metal but on rubber covered you can run the punch in by hand and not drill.

We could not even drive the holes. We had a drill, and had two rolls. One could be drilled while the other was running.

● Apparently the condition in each mill is a little different. Some mills can punch and some have to drill while in some Oakite will work.

Do you use fillers?

No.

Well, that is the difference. That and good clean water.

There is a chemical concern in the East that has something like Oakite but I have never tried it. It is a little stronger than Oakite.

Oakite will eat out a galvanized pan in a short time.

Suction Boxes

● **Question:** With respect to wire life, what is considered the desirable length for the stroke on the oscillation of wire suction box where a cross stroke is used on a speed of 1050 feet per minute or over?

● **Discussion:** I would say ¾" is plenty.

We use ⅜" very successfully.

● Is there any danger to the life of the wire in case two boxes are hanging and one breaks if the oscillation stroke is too great?

I would say that if you start the oscillation with new wire you will not have any hanging.

There are times, no matter how much of a stroke, you will find sometimes that the box is going to hang.

That, perhaps, is so but we have not had it.

● Do you oscillate across the wire or with the travel?

It is a one-way stroke. It is not a round stroke or table stroke. In other words, it is a cross stroke or a one-way stroke. A two-way stroke goes and comes across the wire and we are using a 3/16" stroke but find the wire scores considerably and the wire life is not as good as it should be. I am under the impression that if we have a larger stroke it will improve the wire life.

Perhaps the stroke stops at the wrong place. In other words, if your suction box oscillates across ½" and comes in contact with the wire where it stops, to my notion it would go back the same way and have a chance to wear a groove.

Right, that is what I have found.

Perhaps if you increase or decrease the length of the stroke it might help.

● I think the solution to that problem would be to oscillate with the travel of the wire. That is what we do. One end of the box is going in the direction of the wire and the other end is going against the travel of the wire.

There has always been an argument as to which is the best way to oscillate, with or against the travel of wire.

This way if you had a slack edge and wore a groove in the edge of the box would it give trouble? Oscillation across the box would crack the wire.

If you have the groove wear on the edge of the box, even where you have a stationery box, the wire itself would have a certain amount of travel back and forth.

Turn up the edge of the wire.

The only thing to do is keep the top of the box fairly smooth.

We have a slack edged wire and cut the box down about ¼".

● Do you drain the suction box to stop the wire from sticking and hanging?

Yes they do. The trouble is they are hard to plane and unless you have a machine to plane the box tops it is quite a job.

We have a machine and only plane them in the mills once or twice a year.

Not that often.

● We use edge grain boxes and plane them every three months, but the edge grain does not eliminate sticking entirely although it helps considerably.

There is more smooth surface on the edge grain.

Brass is hard on wire and wears fast.

● Micarta makes a good suction box and stops up pretty well. We had one in for 3 years with very little wear on it.

Crowning Press Rolls

● **Question:** What is considered the best suitable crown in bronze suction press rolls in relation to the top roll whether granite or rubber?

● **Discussion:** I am the originator of that question. Where you use a .040 crown in the bronze roll and .080 in the top roll, if you wanted to change the crown up or down would it be advisable to do that on the bottom or the top roll?

Get them away from working together.

I have always considered the top roll crown should be double the amount of the bottom roll on a suction press.

● I would say in answer to that question that where it is possible it is better to crown the bottom roll for the simple reason you get a better doctor fit on the top roll where there is no crown. If you get the same amount of crown it is not much different than if you get too much crown in the bottom roll.

On the brass suction press you would not crown the press roll more than .020.

We do, we crowned one the other day with .040.

Does it make any difference which roll you put the crown on?

It is sometimes difficult to fiit the doctor on crowned roll.

● Run straight bottom roll and have .080 over all. You would have .080 on top and straight bottom.

You would have a few thousandths to have a straight bottom.

● If you equalize the crown would it affect the finished paper? If you have several crowns in one roll, at the crown point that roll has to travel more lineal feet and might produce a mark on the finished sheet of paper.

The crowning of the roll is to take care of different consistency and is much more at the center of the roll with .100 than at the edges.

But the deflection must be taken into consideration.

The reason why we crown is on account of deflection.

If all the crown is in one roll and none in the other, you will have a uniform amount of deflection in the crown roll, and the crown roll will have the slower speed at the edges and the higher speed in the center.

Yes, there is something to that too.

● The way I see it there are lots of factors to take into consideration. Life, finished product, steam consumption, and uniformity of drying which brings on uniformity of finish and weight. All those enter into the crowning of the roll.

Reason is to get sheet dry evenly across.

You can't always crown the same press on the same machine the same. You can't crown one roll on one machine and expect it to give good results on the other machine. You have to find what deflections there are in that particular roll.

● Someone had a write-up called "Tailor Made Crown." You cannot grind a roll perfectly unless you find out the conditions of your machine. If you have a streak on paper on the edge of the machine that is running a little wet or dry you can take sandpaper and you can tailor crown that roll to get the dry streak out. You can mark the roll and put in some tailor crowns again. That is what I am doing and getting good results.

In other words when you speak of tailor crowning you discover the position of your fault and crown accordingly. That is a tailor crown.

Arguing this point about the peripheral speed of the roll if the roll deflects so that the contact point is straight the radius about the stationary axis is the same for every point on the roll so your peripherial speed at the contact point would not vary from end to end.

You can then get away from the fact that when you turn it on the middle of the roll travels faster than the ends.

It can't travel the same speed as the circumference is larger in the middle than on the end.

● Suppose your roll deflects. In the nap where the pressure is, your straight roll is up where it is not doing anything.

I would say that when it deflects it straightens out the nap where the pressure is and all the extra travel is on the top of the roll.

Here is an illustration of how the crown is determined on the different width of a new machine. If you want the crown to be right, we will say that we are going to use a 75 pound weight on the levers on each side of the roll. If you take and chalk your top roll all the way across and let your roll down on to your bottom roll carefully so that you get the ends to strike the bottom roll evenly and then apply your weights and levers and then take them off and raise your roll up just as carefully as you let it down then your chalk mark will show you whether you have an even crown across by given weight.

● That is a good way if you want the crown roll to suit the amount of weight that you carry on that press. On the other hand if you were to use 100 pounds of weight on that same press roll this crown would not correspond with 100 pounds of weight.

How close do you consider you can get the right crown with chalking?

You can get it exactly.

I tried that but it does not seem to work out in uniformity of drying with the weight we figured.

It is not the fault of the press; it is the fault of the formation of the sheet. Or perhaps the density of the rubber is not the same.

Not rubber. It is bronze with granite on top or hard rubber across.

● I rather think that a very good way as a guide to chalking the roll. It guides but like the freeness test of the stock, all it is is a guide. If you attempt to run a paper machine from that you are not going to make paper. That is the way I would consider chalking the roll. It gets you on the right direction. It is just a guide.

Many times you get in trouble particularly on a marked roll. When using the dryer your roll will heat up. It is hard to crown a marked roll particularly as the heads expand and keep the roll away from the dryer. We try to adjust for that when we grind. The same thing would apply to a press if the bearing gets hot. The end will expand more than it will when it is cool.

Dryer Felt Weave

● **Question:** What results have been obtained from the use of a single weave cotton dryer felt with or without using hot air as compared with multiple weave cotton felts?

● **Discussion:** Does that mean in length of life?

First cost and cost per ton.

That would be a hard one.

Would you have to have a light felt to keep it a lot tighter on the dryer to get the same results?

A certain amount of air is going in with the sheet and if you have a light felt it will lift and tend to keep the sheet away from the dryer as the air tries to squeeze out.

● The difficulty that I experience with the single weave cotton felt is that you can't always keep your moisture content uniform in entering the dryer. Therefore, the single weave felt absorbs moisture and shrinks or stretches according to how the sheet is entering the dryer. Therefore, it is hard to guide and almost impossible to get uniformity in moisture content and finish by using a single weave dryer felt. I would like to find out if the other fellows have had experience with that and what results have been reached from it.

We have used both and have used Asten felts too and have just as much trouble with one weave as the other, including the Asten felt. To overcome this we installed more dryer felt dryers. Have dried our felt out and kept it dry. By doing that we get just as good results from one felt as the other always considering the cost of the felt.

● When I experimented on one machine by installing high pressure dryers I sought to keep the dryer felt uniform. Steam burned the felt whereas using hot air increaseed efficiency and saved the felt.

Was the hot air under pressure?

Yes.

They are discontinuing most single weave and are now selling multiple weave. I think that would be some indication of which is most satisfactory.

Yes, that should be some indication.

Wool Riffle vs. Cotton Riffle

● **Question:** Regarding the efficiency of wool riffle felt versus cotton riffle felt, my thought was, could I use the old felts off the machine as riffle felts?

● **Discussion:** What would you do with the fiber off woolen felt that would get in the stock"

That is one of the things that is wrong with wool felts.

We have been using felts off the machine on the riffles. We have used them for three or four years very successfully.

There has to be nap on the old felts doesn't there?

There is not much nap left after we get it.

● Think the answer to wool getting into the finished product would be to singe the felt and you can get away from it entirely.

No one manufacturing concern has the used singed felt.

Would you use old or new singed felts?

New singed at the factory.

What would be the cost of that versus cotton felts?

Initial cost is about double.

Vortraps

● **Question:** What experience have Pacific Coast mills had with Vortraps?

● **Discussion:** We put Vortraps in on one machine and had some trouble plugging up but on the whole they take out dirt. You can see it come out and after all that is what you are trying to do. That is how to tell whether you take any dirt out of the riffles. You do not have to wait to wash it down, you can see the dirt falling out. I think it would take more

development work to make it 100% efficient. They plug up once in a while but on the whole we are well satisfied with them. We have one machine equipped and one not and run a 400 lb. sheet on the machine that is equipped and the dirt count is considerably lower than running a 260 lb. sheet on the other machine.

Where do they plug up, in the bottom cone?

There is no place where they don't plug up.

The holes in the lower disk.

We are still experimenting to get the best sized holes. If they are not right you may not get the circulation around through the holes.

● We tried a Vortrap ahead of the machine on unbleached sulphite and found it takes out foreign matter heavier than the stock very well. It seems that they took the stock out of the bottom of the head box and it contained quite a bit more foreign matter than stock going over the wires. However, if you take it out of the top of the head box the clean up is not as effective.

● How many Vortraps would you have to have to take care of 50 tons?

About 10 tons per Vortrap per day. Roughly 10 times the per cent of consistency.

Runs a little over that but not very much.

1 per cent consistency 10 tons per day.

We have made 115 tons on ten.

● Tried it in the riffle taking the stock from the flume and passed it through the Vortrap and divided the riffle so that we had the equivalent depart to the rest of the run. It ran that way 48 hours and the Vortrap took out 30 per cent of the dirt.

How much did the riffle take out?

The Vortrap is about 30% as efficient as the riffle.

How did you measure that?

● The only thing we did was to actually pick up the dirt that went through the Vortrap and weigh that and then collect the dirt on the riffle and weigh that. It was a weight calculation.

Were you running over 10 tons?

Running from .4 to .8 the only limit.

● Have you tried putting the stock over the Vortrap that had been over the riffle to see if it caught anything that the riffle had not caught?

What foreign matter that did come out in the stock was so small it did not affect the regular run.

We have riffles ahead of our flat screns and on the unbleached stock and in the bleach plant we still catch dirt in the Vortrap.

● Has anybody tried running with and without riffles to find out the efficiency of riffles?

Riffles are very effective if you keep them clean. Take out all particles of heavy dirt such as sand and metal.

Our experience is that we have so small an amount of heavy particles that the riffles are not very effective in removing other dirt.

You don't need riffles.

● The way to make a test on Vortrap is to have one installed just ahead of your machine and if it takes out dirt that dirt is not in your pulp.

If they take some out I think they are worthwhile.

They do take some out and you can see it and examine it. If you can collect it out of the stream of pulp it is not in the pulp when it goes on the machine.

Glued Dryer Felt Seams

● **Question:** Has anyone here had experience with the glued dryer felt seam?

● **Discussion:** Through the records of Mr. Hodges and the glue that the Asten people put out, I tried the glued seam in a felt that was finished as far as rivets were concerned. I got 40 days more on the glued seam than I would have if I had had to rely on the rivets. So I can speak very highly of glued seams.

Do you use rivets with the glue?

No, the rivets are only on the edge.

What kind of glue is this?

● It is a special cement made by DuPont.

How wide a lap is there?

4" is the actual joint.

Is there any difference in the drying effect with the lap?

Apparently none. Very narrow and smooth and keeps dried out. At least there is no rot out.

Where is the glue made?

● International Paper Company started this glue some two years ago. It first sold at $15 per gallon but that has been taken care of, and they have experimented with this difficulty in getting the joint in right and giving sufficient time to dry. Getting it right makes an endless felt and gives it a very great tensile strength. Moisture does not affect it. The cement was developed for that purpose. You put the clamp on while it is drying. The clamp is 6" wide and felt should remain stationary for two hours or longer. The longer the better.

What is the price of the glue now?

$5.50 per gallon.

Putting in seams is not the most important part. You keep 1" with no glue on it so no glue gets back on the sheet.

Wire Tension

● **Question:** Has anyone any information on the effect of tension in the wire on wire life?

● **Discussion:** A minimum of 20 lbs. per inch is the proper tension.

No way of measuring.

20 lbs. appears to be sufficient tension to keep it from slipping on the couch roll. The thought behind that is that the least tension you can have and not have any slipping is proper. Excess tension above

What mesh wire?

True of practically all meshes.

Get a lot of difference on slipping on 60 or 80 mesh.

I think they were working with 60 on this particular job.

● The thing is to run with as little tension as possible and still not have slippage.

The trouble is to determine tension. We do not have any instruments to measure tension so consequently we have to guess at it.

The only way you can get that is with the new automatic stretch. Weigh it down like you would a dryer felt.

● I believe that the Taylor Instrument people have an instrument for checking that but it is an idea of mine that a single roll could be put in so that you could determine where the stretch came and could then calibrate it so that the superintendent could tell what the tension was in the wire by just a glance during the entire life of the wire. It is not so efficient to have the wire slack at the beginning. In order to get the most life out of wire you have to watch the tension.

I have given some study to that question and I understand that it is not claimed that excessive tension tends to cause any more frictional wear. The frictional wear or all the wear is due to slippage and I believe that at the Wire Association meetings it has been discussed and it is generally considered by the wire manufacturers that 85% of the wire is worn at the suction boxes, about 5% on the couch roll and 10% on other carrier rolls. The couch roll has more than any other as that is the drive roll and it is hard to eliminate all slippage. The suction box counts for the most expanse as far as wire is concerned.

● How tight do you carry a wire?

Don't think you can arrive at any particular tension on the wire in comparing slower speeds with higher speeds. My experience has been with both slow and high that a wire carried during the life of the wire just a bit on the tight side will give better life than on the slack side as there is not so much slippage where the wire is tight. Over 1150 ft. up to 1250 ft. you have to run a tight wire.

Construction Materials for Filters, Deckers

● **Question:** As manufacturers, we are continually running into the problem of what combination of materials to use in the vacuum washers or deckers in washing unbleached and bleached stock. How much effect electrolysis has on the break down of the wire? On the decker it is a little different as you have a couch roll run mechanically. Vacuum doesn't have much effect as the sheet is lifted off the wire. Am particularly interested to know from the chemical angle. Had less trouble in kraft washing than in sulphite, bleached and unbleached.

● **Discussion:** In your kraft washing don't use bronze.

Use monel most of the time. Used to use stainless steel rods with stainless steel winding wire with stainless steel face in kraft deckers, and stainless steel drainage with monel face and have no trouble with that. It seems the monel stands up very well but where we have had trouble is right after washing directly after the monel screen. It is a combination decker and washer using best acid bronze and winding wire and on top put stainless steel face, Ka2MO. Operated 16 months. Bronze winding wire is gone and bronze drainage deteriorated, yet the stainless steel face which was cause of failure of the winding wire shows no corrosion at all.

You have electrolytic action pure and simple.

We have found in some cases there is electrolysis and in some cases there is none. You can't predict what will happen. Use the same kind of metal all the way through and there is no electrolysis.

● But that is very expensive, if the decker is in good condition and you have to replace the rods and winding wire.

How low a pH can you run on your unbleached side and still be within reason so you don't get electrolysis to any great extent?

● I would say that if you don't get below 6.0 you won't get any electrolysis.

Most of them run between 4.0 and 5.0 and do not seem to get any better wash.

Breaking Up Hard Rolls

● **Question:** In our mill we buy all our pulp and in place of buying ground wood we buy side runs of news print and strike certain rolls that cannot be beaten up. We run along 50% sulphite and 50% news print and suddenly lumps show up that can't be beaten out. We use steam temperature up to 160 degrees and tried putting in ammonia but every once in a while we get a bad roll that can't be beaten up. If you put in too much you remove the fibre.

The longer they stand around the mill the harder they are to beat up; they get dryer.

● **Discussion:** We run into the same thing in beating our own broke. A burnt sheet or old or over-dried paper would naturally give trouble.

Do you get your news print from various sources?

No, just one place.

Have you ever taken into account how long the paper with which you had trouble had been in stock?

We never know how long it has been in storage at the source of supply.

● Last week we finished up some stuff that had been lying around over a year and had no trouble, while with some new stuff from the mill we had trouble.

Do you put your stock in a place where it can pick up moisture?

Some of it picks up moisture and some doesn't. Some got good and wet and still broke up.

The beater engineer slipped up there.

I think you get paper from Powell River Company. We have beaten up rolls that have been lying around from two to ten months and have not run into that difficulty.

I cannot understand why you have difficulty in beating it up.

Do you use steam?

We use hot water in the broke beater.

Do you use sizing in your news print?

Occasionally, yes.

That is probably the difficulty right there.

Making Soft Tissue Pulp

● **Question:** If you want to make soft absorbent tissue pulp, would you make it in the digester, the bleach plant or a combination of both?

● **Discussion:** My answer to that question would be that you could not make it anywhere but in the digester.

I would say the bleach plant.

There are so many things that enter into hard and soft stock that that is a very difficult question. Your wood, in the first place, enters into it to a very great extent.

● Recently we have been cooking some white fir against hemlock and we find that we can get a much softer pulp from white fir than from the hemlock. There is a whole lot of difference in the softness of a sheet on one kind of wood or another.

How does it affect the operating efficiency?

It does not affect the efficiency at all but it does affect the tests. You get a softer sheet and it does affect the test to a certain extent. We find that white fir gives us a strength almost as good as hemlock with the exception of tear.

● I think the place to do it is in the digesters if you have enough digesters. You could probably do it in the bleach plant but it takes more chemicals and steam to get the same results, but you can do it in both places.

We find we get much more stock out of a hard cook.

I would like to get an expression from men who have had experience using white fir versus hemlock, particularly in regard to difficulties in production.

On what grade of paper?

Tissues and fruit wrap and such as that.

● Will some of you tissue men answer that?

I imagine any type of paper would apply.

All I know about it is that with white fir you have to steam up a lot more than with hemlock to get your strength.

Would it naturally interfere with the run of the machine a little?

Yes.

When you steam up do you find any difficulty getting the same production?

It can't dry as much. You have to run slower stock and that slows the machine down.

About what percentage?

About 10% on 25-pound sheet.

● I think that can be eliminated from pulp if they wash it and cook the white fir a little harder. If they do not wash it they get the stuff too soft. We have had white fir that cooked as well as hemlock.

Hemlock will do the same thing if you overcook it.

Is soft stock harder to get over to the machine?

● It is not harder to get to the machine but you have to slow up your stock and run it slower and shorter than harder stock. On tissues I know nothing about it.

Felt Conditioners

● **Question:** What results from using Vickery felt conditioners in pulp mills?

Has anyone used Vickery felt conditioners on pulp machines?

● **Discussion:** In Everett we started with one felt conditioner on the first press and had considerable difficulty with filling up in the felts on No. 2 and No. 3 presses and installed two additional on a trial basis and the unanimous opinion on the part of machine operators and superintendents is that they are well worth the investment.

Incidentally, before we installed these felt conditioners we had felt suction rolls requiring more horsepower and more vacuum capacity than a conditioner and not giving as good results.

Did you discontinue the suction roll?

● We took them out of the machine altogether.

That answers one question I had about what results anyone had had with felt suction rolls.

Has anyone had any experience with open suction box with felt roll or table roll inside of it?

You mean a rotary suction box?

● No, just a plain open suction box used on the outside of your felt with a roll through the center of it to take the wear off of your felt.

● Back in the mid-west they started to do that a couple of years ago but I have never heard the results they got. I would be interested to know what they are.

Continuous Beating

● **Question:** Has anyone had any experience with continuous beating; that is, passing the stock continuously from one beater to another without dumping the beaters? Pass the stock continuously from one beater to another and it runs out of the last beater into your chest. I might give you some figures on continuous beating over batch beating.

● **Discussion:** About a year ago we installed continuous beating on one of our machines and were using 320 kilowatts per ton on high grade kraft paper. Since we installed continuous beating we dropped the kilowatt hours down to 150 per ton. Now that is something to think about. We got exactly the same finish with exactly the same tonnage through the beater.

Did you size right away?

No, in the last beater.

Do you pump from one beater to another?

No, we do it with a screw conveyor.

● How did you obtain that reduction in power consumption?

Lightening the pressure on the rolls and decreasing the height of your stock going into the rolls.

Do you have just as much carry-over as with the old fashioned beater over the top of the roll?

What do you mean by carry-over?

● When you are beating there is a certain amount of stock carried over the top and dropped down in front.

We have decreased the carry-over.

Very much?

Yes.

Did you alter the height of your back roll?

Some.

How does the stock get into the screw conveyor?

● The roll throws it in and the screw conveyor drops it into the next beater and takes it out of the opposite side of the beater and so on.

Do you have stone rolls?

Stone bed plates with steel bars.

Would not that be difficult in changing color stock?

● No, when we are on colors we mix the color into a tank and run it in. We do the same thing with our sizing.

Do you have a proportioning pump for the color?

No.

How do you govern the amount that goes in per ton?

● We have a little home made gauge we use.

Where do you put the color in?

The first beater and it comes out more uniform than in batch beating.

Where do you put the sizing in?

● The sizing goes in the last beater and the alum goes in before the machine. We put the alum in the head box in the heavy pulp.

When you are using white fir would you use that the same as hemlock or would there be any change in beating time required?

Quite a drop.

We find it much slower to run on a pulp machine.

● In this system have you had any difficulty when putting your color in that particular position, in getting your sulphite off color—streaked sheets?

No, more uniform than ever before. When batch beating, unless you get the amount of stock in each beater correct you are going to get off color. Unless you have a very large beater chest you are going to feel the effect of it on the machine, but by putting the color in a continuous beater you don't get any variation at all in color or consistency.

● What is the approximate pH of your stock about the time you add the color?

I would say about 7.0. If you use acid colors you would get a different pH.

What is the approximate pH when you add the alum in the head box?

We generally run a pH of 6.5 when running color of any kind. Without color we run a pH of 6.6 to 6.8.

● Do you not have any trouble with weight?

No.

Do you re-introduce your broke in the first beater?

● No, we have a broke beater in the first machine and send it back to the storage tank in the pulp mill. In other words, our broke all comes back as new pulp.

Do you have any trouble coloring?

No.

Wet Machine Dryers

● **Question:** What per cent air dry is being obtained on the wet machines?

● **Discussion:** What kind of pulp?

Sulphite.

About 35% the year around.

On single speed press?

Yes.

Sandwell Named Derwent Valley Engineer

Construction to Start This Spring— First Unit Will Produce 100 Tons Per Day

Australia's newsprint manufacturing project in the Derwent Valley of Tasmania has now been fully financed, and construction will start during the coming spring under supervision of Percy Sandwell, Vancouver, B. C., consulting engineer who has been prominently associated with the pulp and paper industry on this coast for several years.

Mr. Sandwell, appointed chief engineer of the Australian project late in December, left New York on the Berengaria a few days ago for England and Scandinavia where he will place orders for equipment for the Australian mill. He will return to this coast in March and leave for Australia a few weeks later to get construction under way.

● "We are going to install a 100-ton unit at first, but the ultimate capacity will be 400 tons," Mr. Sandwell told Pacific Pulp & Paper Industry soon after receiving his appointment. "Four million dollars is the estimated cost of the job now in hand. The total project will cost about $15,000,000. We expect to start production by May, 1939."

Mr. Sandwell's undertaking is one of the most difficult to be tackled by a pulp and paper engineer in many a day, as it will involve a trail-breaking job every inch of the way. Newsprint manufacturing is so far unknown to Australia, as it was only discovered a few years ago that by the introduction of acids according to a specially devised formula Australia's native wood, eucalyptus, could be used for the manufacture of paper sufficiently strong and otherwise suitable for newspaper use. A certain proportion of pulp from this coast will have to be mixed with the Australian eucalyptus pulp to obtain the right quality, and naturally a good deal of additional experimentation will have to be done.

● Another handicap will be the fact that the plant is to be installed and placed in working condition many thousands of miles away from territory familiar with pulp and paper practice and technique and an equally long way from the foundries and factories producing mill equipment. However, Mr. Sandwell is well fitted for such a pioneering job. He is recognized as one of the best informed all-round pulp and paper technicians in the Pacific Northwest. He was resident enginer for the Powell River Company for several years. Since then, as consulting engineer, he has often been engaged by such organizations as British Columbia Pulp & Paper Company and Crown Zellerbach Corporation.

Chairman of the board of the Derwent Valley Paper Company is Thorold Fink, head of a group of Australian publishers, who are being subsidized by the Australian government to the extent of about $30 a ton of newsprint produced. The subsidy is given in recognition of the national importance of developing a supply of newsprint that will be at least partly independent of foreign sources. At present Australia buys all its newsprint from outside the commonwealth, about 70 per cent from Canada, where William Dunstan, general manager of the Melbourne Herald, recently negotiated an agreement with seven large newsprint mills for a supply of paper over a term of years at prices stabilized at the prevailing New York rate. In the past, owing to Australia's total dependence on outside markets and its distance from the mills, newsprint prices have been subject to violent fluctuations, and it is hoped that establishment of the industry in Tasmania, coupled with the new pact with Canadian producers, will largely eliminate that condition.

● While Mr. Dunstan was on this coast he conferred several times with Mr. Sandwell regarding the Derwent Valley project and the engineering details involved. Mr. Sandwell was given his instructions to go ahead soon after Mr. Dunstan returned to Australia.

It is estimated that under normal conditions, when the new mill is in full operation with a production of 400 tons daily, it will provide about 60 per cent of the commonwealth's total requirements of groundwood pulp, newsprint and kraft paper. The balance of the country's requirements will be obtained from Canada.

The experiments which demonstrated that eucalyptus, specially treated chemically in the digesting process, could be used satisfactorily in the making of newsprint, were carried on at the plant of Pacific Mills, Ltd., at Ocean Falls, B. C., two years ago.

Oregon Pulp Resumes Operations

The Oregon Pulp & Paper Company's mill at Salem, Oregon, resumed production January 10th after closing down at the first of the year.

Benner of Powell River Retires

H. E. Benner, sawmill superintendent for the Powell River Company for fifteen years and a pioneer Pacific coast lumberman, has retired and gone to Portland to live. He is being succeeded by J. H. Jamieson, formerly in charge of the barker mill at Powell River.

Benner worked in the lumber business in Seattle many years ago and went to Vancouver in 1906. He was with Victoria Lumber & Manufacturing Company at Chemainus for a while.

George Berkey Dies Suddenly

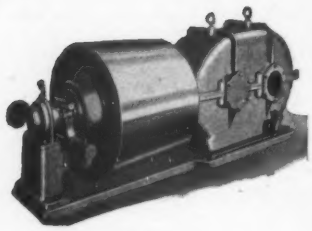
As this issue is on the press word is received that George P. Berkey, vice-president of the Crown Zellerbach Corporation, died from a heart attack at his home in Portland on the evening of January 13th.

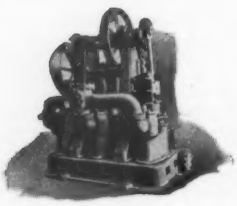
Mr. Berkey was in charge of the Crown Zellerbach Corporation's operations in the Pacific Northwest.

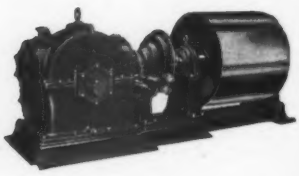
Troetcher Passes January Seventh

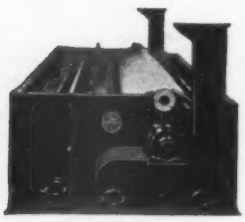
A. E. Troetcher, well known sulphate superintendent passed away January 7th after suffering a stroke December 31st. Mr. Troetcher had been doing special work for the St. Helens Pulp & Paper Company for the past six months.

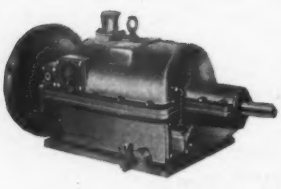
From 1930 until the middle of the past year he had been sulphate superintendent at the Camas mill of the Crown Willamette Paper Company, Division of Crown Zellerbach Corporation. Funeral services were held January 11th.

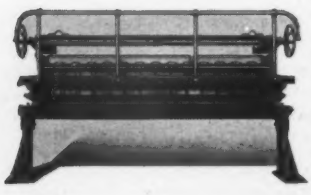












IT WILL PAY TO MODERNIZE

Quality . . Speed . . Production

● The necessity for modernization is already evidenced by the rebuilding programs now under way in many of the progressive paper mills throughout the country.

The reduction of manufacturing cost and general improvement in range and quality of papers points directly to the advisability of modernizing existing machines, or replacing obsolete equipment with modern units.

The continuous cumulative cost of repairs and shutdowns, with attendant losses in production and quality, soon approaches the cost of new equipment.

During recent years many developments have been brought out, all of which are applicable to existing machines, and in many cases these improvements can be made the means of improving mill conditions without excessive cost.

It is our experience that a preliminary survey and discussion regarding a program for increasing production or improving quality often brings out ways and means for accomplishing the desired results without the expenditure of a great deal of money.

There is always the question as to whether it is advisable from an economy standpoint to rebuild or replace certain parts. These are matters which we will be glad to discuss and attempt to formulate a program which will be mutually advantageous.

An opportunity to discuss possible requirements will be appreciated, and preliminary surveys made without obligation.

★ ★ ★

THE BAGLEY & SEWALL COMPANY

WATERTOWN, NEW YORK

THE MARK OF CRAFTSMANSHIP

TAPPI Discusses Heat Requirements

For Drying Pulp—Sees Moving Picture, "Heat and Its Control."

• The Pacific Section of TAPPI held its third dinner meeting of the 1937-1938 winter season at the Hotel Heathman, Portland, Oregon, January 11th. Kenneth B. Hall was chairman of the meeting.

Eighty-five men listened to the discussion of "Heat Requirements for Drying Pulp," led by A. H. Lundberg of Seattle, and saw the sound motion picture, "Heat and Its Control," prepared and exhibited by the Johns-Manville Corporation. C. E. Weinland of the Johns-Manville Sales Corporation added several points to the story of the picture and answered questions concerning heat and cold insulation problems.

• A. H. Lundberg of Seattle, as representative of the Swedish Fan Company, manufacturers of the Flakt pulp dryer, gave a paper and led a discussion on the subject of "Heat Requirements for Drying Pulp." Mr. Lundberg handled his subject cleverly and effectively by frequently interrupting his own presentation and asking questions of members of the audience. Some he had warned in advance and others he took by surprise. During the preparation of his paper Mr. Lundberg had written a number of operating men concerning their studies of the drying of pulp. He read answers from those who could not be present and called upon those who were present to give their own statements.

This method worked well in promoting general discussion and it also injected much humor into the subject matter.

• Chairman of the Pacific Section, George H. McGregor, served as chairman of the meeting and told of the changes in the dinner meeting planned for Tacoma and Vancouver. He also outlined the future programs. Details of these changes and of the programs appear elsewhere in this number.

Appreciation was expressed to Kenneth B. Hall who arranged the details of the Portland dinner, and to Mrs. Hall who assisted him.

The following men attended the Portland dinner meeting:

C. E. Ackley, Hawley Pulp & Paper Co., Oregon City; Leslie L. Anderson, Pulp Division, Weyerhaeuser Timber Co., Longview; Nat. T. Ashkins, Keystone Lubricating Co., San Francisco; Fred M. Ayer, Stetson Ross Machine Co., Alaska; F. E. Bailey, St. Helens Pulp & Paper Co., St. Helens; W. R. Barber, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas.

Harry S. Bastian, R. E. Chase & Company, Portland; George H. Beisse, Pulp Division, Weyerhaeuser Timber Co., Longview; Paul S. Billington, Pulp Division, Weyerhaeuser Timber Co., Longview; Carl E. Braun, Hawley Pulp & Paper Co., Oregon City; Robert A. Bremner, Electric Steel Foundry Co., Portland; John E. Brown, Pacific Pulp & Paper Industry, Portland.

R. S. Carey, National Aniline & Chemical Co., Portland; R. E. Chase, R. E. Chase & Company, Tacoma; William W. Clarke, Longview Fibre Company, Longview; J. V. B. Cox, Hercules Powder Co., Portland; H. A. Des Marais, General Dyestuff Corp., Portland; R. E. Drane, St. Helens Pulp & Paper Co., St. Helens.

Arthur E. Erickson, Pulp Division, Weyerhaeuser Timber Co., Longview; Carl Fahlstrom, Longview Fibre Company, Longview; Harry Fromong, Hawley Pulp & Paper Co., Portland; Irving R. Gard, Merrick Scale Mfg. Co., Seattle; Ben Gellenbeck, Keystone Lubricating Co., Tacoma; T. H. Grant, Columbia River Paper Mills, Vancouver, Wash.

Kenneth B. Hall, Improved Paper Machinery Corp., Portland; Jan Haugerod, Crown Willamette Paper Co., Division Crown Zellerbach Corp., West Linn; John E. Hassler, Coast Mfg. & Sales Company, Portland; H. A. Hauff, Pulp Division, Weyerhaeuser Timber Co., Longview; S. Hazelquist, Pulp Division, Weyerhaeuser Timber Co., Longview; George K. Horton, Longview Fibre Company, Longview.

George W. Houk, Hooker Electrochemical Co., Tacoma; W. A. Kaye, Crown Willamette Paper Co., Division Crown Zellerbach Corp., Camas; Norman Kelly, Pulp Division, Weyerhaeuser Timber Co., Longview; J. C. Lane, Northwest Lead Company, Seattle; A. H. Lundberg, Swedish Fan Company, Seattle; D. K. MacBain, Pulp Division, Weyerhaeuser Timber Co., Longview.

C. J. McAllister, Coast Mfg. & Sales Company, Portland; G. H. McGregor, Pulp Division, Weyerhaeuser Timber Co., Longview; Ned Menzies, W. S. Tyler Co., Seattle; R. G. Mispley, Crown Willamette Paper Co., Division Crown Zellerbach Corp., Camas; T. H. Moran, Pulp Division, Weyerhaeuser Timber Co., Longview; C. W. Morden, Morden Machines Company, Portland.

A. G. Natwick, Crown Willamette Paper Co., Division Crown Zellerbach Corp., Camas; Buell C. Nelson, Beaver Portland Cement Co., Portland; Chas. A. Newhall, State of Washington, Dept. of Health, Seattle; Fred Nicholson, Stetson Ross Machine Co., Seattle; S. Norman, General Iron & Steel Works, Portland; M. H. Norton, Longview Fibre Company, Longview.

M. E. Norwood, Columbia River Paper Co., Vancouver, Wash.; Lloyd Olson, U. S. Forest Service, Portland; Frederic M. Pape, Wilson & Geo. Meyer & Co., Seattle; J. W. Peckham, Bristol Co., Seattle; Morris M. Peterson, Pulp Division, Weyerhaeuser Timber Co., Longview; R. T. Petrie, Bagley & Sewall Co., Portland.

H. L. Plumb, U. S. Forest Service, Portland; Albert S. Quinn, Stebbins Engineering Corp., Seattle; Ralph Reid, Spaulding Pulp & Paper Co., Newberg; H. H. Richmond, Electric Steel Foundry Co., Portland; J. E. Ryberg, St. Helens Pulp & Paper Co., St. Helens; B. W. Sawyer, Foxboro Company, Portland; Harlan Scott, Pacific Pulp & Paper Industry, Seattle.

A. P. Siebers, Longview Fibre Co., Longview; C. J. Siefarth, Electric Steel Foundry Co., Portland; Charles M. Server, Appleton Woolen Mills, Portland; Fred Shaneman, Pennsylvania Salt Mfg. Co. of Washintgon, Tacoma; C. Sholdebrand, Hawley Pulp & Paper Company, Oregon City; Paul Shuey, Johns-Manville Co., Portland.

J. F. Smith, Great Western Electro-Chemical Co., San Francisco; Lloyd E. Stevenson, Pulp Division, Weyerhaeuser Timber Co., Longview; R. E. Strommer, Longview Fibre Company, Longview; Franz Sturm, Oregon Pulp & Paper Company, Salem; Philip E. Sullivan, Ingersoll Rand Co., Seattle; Virgil M. Sutherling, Longview Fibre Company, Longview.

Paul J. Thiess, Longview Fibre Company, Longview; Earl G. Thompson, Great Western Electro-Chemical Co., Seattle; Robert M. True, General Dyestuff Corp., Portland; Cecil Triplett, Hawley Pulp & Paper Co., Oregon City; H. A. Vernet, Kelley Clarke Company, Portland; Harold C. Wall, Longview Fibre Company, Longview.

C. E. Weinland, Johns-Manville Co., San Francisco; Fred J. Weleber, Hawley Pulp & Paper Co., Oregon City; Rex L. West, Longview Fibre Company, Longview; J. B. Wilt, Spaulding Pulp & Paper Co., Newberg; Edward P. Wood, Pulp Division, Weyerhaeuser Timber Co., Longview.

TAPPI Changes Dinner Meeting Schedule

Tacoma and Vancouver Dates Interchanged

The dinner meeting of the Pacific Section of TAPPI originally scheduled for May 3rd in Tacoma, Washington, has been changed to March 10th, and the Vancouver, B. C., meeting previously planned for March 10th will now be held May 3rd.

This announcement was recently made by N. W. Coster, vice-chairman of the Pacific Section in charge of programs and by George H. McGregor, chairman.

The reason for the change in the Tacoma meeting is to coincide with the fiftieth anniversary celebration of the College of Puget Sound which will be held the first two weeks in March.

TAPPI chairman George H. McGregor has appointed William T. Webster, general superintendent of the St. Regis Kraft Company as chairman of the Tacoma meeting. Mr. Webster will cooperate with Dr. E. A. McMillin, head of the Department of Chemistry at the College of Puget Sound in arranging the program.

During the anniversary celebration the various departments of the College of Puget Sound will exhibit their work.

The dinner, March 10th, will be held at the College of Puget Sound. The program will include a talk by Roderic Olzendam of the Weyerhaeuser Timber Company and probably a showing of the new Weyerhaeuser sound moving picture, "Trees and Men." Details will be announced in the February issue.

The TAPPI dinner meeting program, including the above change, is now as follows:

FEBRUARY 8th—Camas Washington. Talks by A. R. Heron, assistant to the operating committee of the Crown Zellerbach Corporation and R. B. Wolf, general manager of the Pulp Division Weyerhaeuser Timber Company. Mr. Wolf will give a short talk on his recent European trip.

MARCH 10th—Tacoma, Washington. Program outlined above.

APRIL 5th—Seattle, Washington. Inspection of the new Bagley Hall, chemistry building and two talks by members of the Department of Chemistry, University of Washington.

MAY 3rd—Program to be announced later.

JOINT ANNOUNCEMENT

STURTEVANT MILL COMPANY

AND

PAPER & INDUSTRIAL APPLIANCES, INC.

Agreements have been completed between these Companies so that hereafter all business dealings with pulp and paper mill machines manufactured by Sturtevant Mill Company and consisting of

STURTEVANT BALE PULPER
POIRIER WEIGHT GOVERNOR
POIRIER CONTROL
POIRIER VACUUM CONTROL

will be handled in the United States and Canada directly by the Sturtevant Mill Company, and all exports and foreign licenses by Paper & Industrial Appliances, Inc., or its affiliate Paper & Industrial Appliances, Ltd., or Agents.

Sturtevant Mill Company, Harrison Square, Boston, Mass.

Paper & Industrial Appliances, Inc., 122 E. 42nd St., New York, N.Y.

Rayon and other CHEMICAL USES OF WOOD PULP

World Rayon In First Half Year

World production of rayon and staple fiber in the more important producing countries is shown in the following table which gives estimates published in the November 1937 issue of "Silk and Rayon," Manchester, England:

Country	Rayon Production 1937 Jan.-June (1,000 pounds)	Rayon Production 1936 Jan.-June (1,000 pounds)	Staple Fiber Production 1937 Jan.-June (1,000 pounds)	Staple Fiber Production 1936 Jan.-June (1,000 pounds)
Belgium	8,900	7,000	----------	----------
Britain	59,610	58,290	14,100	26,200
France	23,500	23,000	6,500	12,000
Germany	58,500	55,500	75,000	90,000
Italy	49,690	44,150	75,650	110,000
Japan	160,095	129,750	67,000	45,800
Netherlands	11,250	10,250	600	1,000
Poland	6,600	5,400	1,325	1,200
Soviet Union	6,500	6,500	----------	----------
Sweden	830	----------	400	350
United States	155,300	134,950	8,000	12,400
Canada	7,150	7,000	----------	----------
Other Countries	15,025	15,800	----------	----------
Total	562,950	497,590	248,575	298,950

"Other countries" in the list of rayon producers includes the following countries whose output in the 1937 period was estimated as follow: Argentina, 300,000 pound of acetate fiber; Austria, 900,000 pounds of viscoce rayon; Brazil, 1,300,000 pounds of viscose and 850,000 of acetate fiber; Czechoslovakia, 4,480,000 pounds of viscose; Spain, 1,000,000 of viscose; Greece, 145,000 pounds of viscose; Hungary, 50,000 of cuprammonium rayon; Rumania, 50,000 pounds of viscose; and Switzerland, 5,500,000 pounds of viscose.

World production in the first quarter of 1937 is estimated to have comprised 237,950,000 pounds of viscose rayon, 27,415,000 pounds of acetate fiber, and 9,590,000 of cuprammonium and other rayon; in the June quarter the total included 249,430,000 pounds of viscose, 28,920,000 of acetate, and 9,645,000 of cuprammonium and other rayon. The total for the March quarter was 274,955,000 and for the June quarter was 287,995,000.

Germany Using 20% Staple—80% Cotton Mixture

An active rate of employment in staple fiber spinning and weaving mills during the third quarter of 1937 was indicated by reports received from the various sections of the textile industry. The emphasis on the increased use of staple fiber was caused to some extent by the difficulties in securing cotton supplies. Mills were sometimes unable to make deliveries of staple fiber yarns and fabrics as quickly as desired by their customers. Bavarian textile mills reported an unusually good demand for staple fiber yarns and fabrics with an increased proportion of export orders.

Effective October 1, 1937, at least 20 per cent of staple fiber must be used as an admixture in cotton yarns from 16s to 45s, inclusive, according to a regulation of the Control Board for Cotton, Silk, Rayon, and Staple Fiber. The order does not apply to products intended for exportation. Another regulation of the control board provides that, pending a further increase in staple fiber production, the quarterly amount of pure staple-fiber yarns to be worked up will be fixed at the average amount worked up during the first 2 quarters of 1937.

The German velvet industry is said to be endeavoring to increase its use of staple fiber. Velvet with warp or filling of staple fiber or entirely of staple fiber yarns is said to be finding favor with foreign customers, particularly British buyers. A new rayon plant with a yearly production capacity of 3,500 metric tons was established during 1937 at Krefeld by the velvet and silk industry in that district with financial assistance from the Reich Commission for Textile Raw Materials. It is hoped that the new plant will be able to meet the Krefeld industry's requirements for special types of yarns.

Special types of staple fiber and yarns were included in the textile exhibits at the Leipzig Fall Fair. A feature of the exhibits was the increasing use of staple fiber as a substitute for cotton and wool in the manufacture of a wide variety of textile products. (Based on reports from the American Consulates at Dresden, Leipzig, and Stuttgart.)

Japanese Rayon Production Curtailed

The rayon market has been suffering from overproduction and excessive stocks, and press reports in November indicated that the Japan Rayon Producers' Association had reached an agreement for a further reduction in yarn production. Curtailment during December through February will be increased to 65 per cent for large producers and 62.5 per cent for smaller plants, to be accomplished by sealing 40 per cent of the total spinnerets in plants having more than 1,500 spinnerets and sealing 37.5 per cent in plants having 1,500 spinnerets or less; in addition member mills will further seal 25 per cent of operating spindles.

Germans to Make Rayon From Beech

A new company, under the name of Schwaebische Zellstoff and Zellwolle, has been established in Germany for the purpose of manufacturing chemical pulp suitable for use in the textile industries. The capital stock of this concern is said to be 6,000,000 Reichsmark (RM equals .4038c U. S. currency), one-half of which has been subscribed by local textile enterprises.

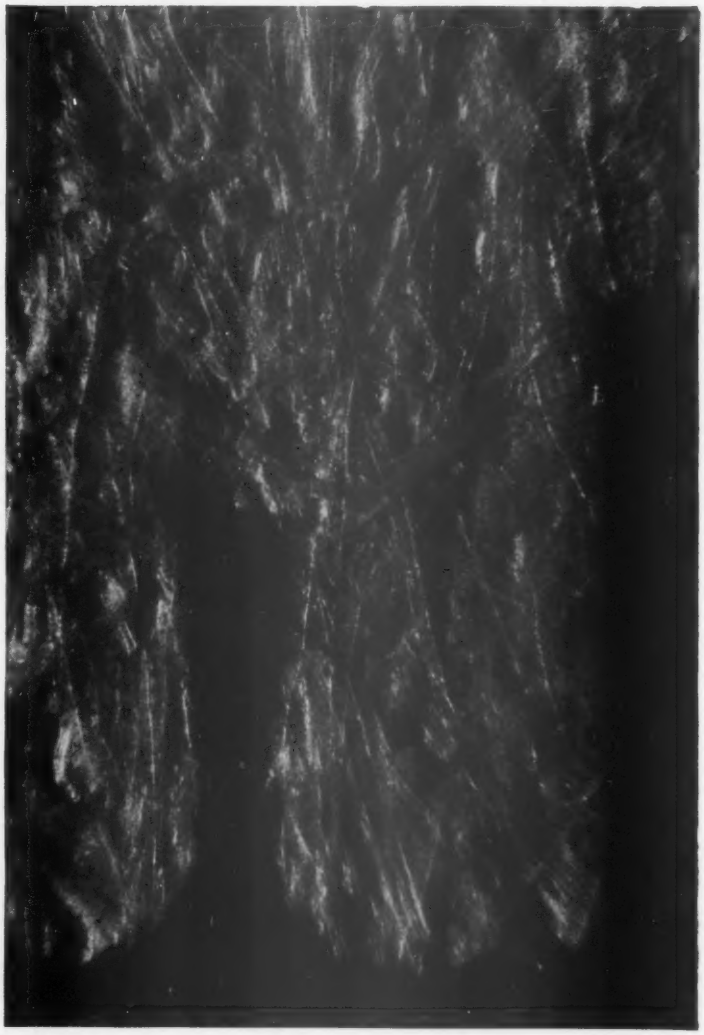
The company plans to start erection of its mill in the spring of 1938 and to begin operations by the end of the year. It is estimated that approximately 300 workmen will be employed at the mill and that the annual production will be in the neighborhood of 20,000 metric tons. While most of the mills in Germany utilize pine wood in their operations, it is understood that this company will manufacture pulp from beech wood in accordance with a process developed by the Wolfen plant of the I. G. Farbenindustrie.

The new company also proposes to undertake the construction of a factory for the production of artificial fiber as soon as practicable after the completion of the chemical pulp plant. It is reported that this project will be supported by loans to the amount of RM 4,000,000 from German banks, and that these loans will be guaranteed by the German Reich. Local industry will be solicited to raise an additional RM 4,000,000. It is planned to produce around 10,000 metric tons of artificial fiber annually. (American Consulate, Stuttgart.)

Japanese to Erect Rayon Pulp Mill in Manchuria

A rayon pulp mill with an initial capacity of 15,000 tons is to be erected at Kaiyuan by the Manchuria Beanstalk Pulp Company. It is to be ready for production by the end of 1938 according to local reports. (Office of the American Commercial Attache, Shanghai.)

WHAT IS IT?



The fur of a rabbit?

A sand-trap on a golf course?

A shadow on barren land seen from the air?

NO, it is a microphotograph of a piece of paper magnified 75 times. The dark area is one corner of a letter printed on the surface.

With pictures like this, Kenwood studies finish problems for its customers. Sometimes paper carries a surface mark when it comes from the machine. What is causing it? Perhaps a felt, perhaps a wire, perhaps rough fibers in the pulp. Whatever the cause, you may be sure the guilty party has left a "finger-print" which the naked eye can not see but which the microscope reveals.

You can always bring your problems to Kenwood, knowing its laboratory is ready to help you. And you can buy Kenwood felts with confidence, knowing they are the product of more than 65 years of constant effort to serve the paper industry better.

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Pacific Coast Representatives

Pacific Coast Supply Company

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708 White Bldg.—Seattle, Wash.
343 Sansome St.—San Francisco, Calif.

F. C. HUYCK & SONS

ALBANY, N. Y.

Rayonier at Port Angeles Has Efficient Report Board

Under the direction of Wallace Crait, personnel and safety supervisor, the Port Angeles Division of Rayonier Incorporated (formerly the Olympic Forest Products Company) has developed an original adaptation of the accident report board, which commands daily attention.

The board, which is pictured on this page, is located alongside the time clock where all employes entering and leaving the mill cannot fail to see its red and white lights.

As will be seen from the photograph the board shows the accident record for the calendar year and by the several departments. The departments do not compete against each other, the competition being limited to the men working in each department to see how safe they can make their own work and avoid a red light appearing opposite their department on the accident report board.

As long as no lost time accident occurs in a department the light alongside remains white, but should one occur the light goes red and remains red the balance of the calendar year.

It will be noted that the red and white lights also appear above each month. When all departments have a safe month, as in September, 1937, the light remains white, but should any department have a lost time accident during the month the light at the top turns red.

Each department has its own small accident report board on which is posted the department's record for the previous month. A fictitious example illustrates the method of posting department records. In the sawmill department an accident of the following type might be reported:

On December 7th, John Jones, utility man, was struck on the knee by a piece of slab from edger rolls.

Cause: Arrangement of Work.
Personal (Inexperience)
Type: Falling Object
Classification: Reportable
Time Loss: None

These department boards serve as constant reminders of the necessity of working safely and they turn the spotlight on men who are careless in their work causing fellow workmen to insist that the negligent one work with greater care.

Rayonier's safety program is materially reducing the number of lost time accidents at the Port Angeles plant as will be noted by totaling the last two columns on the board.

In the calendar year 1937 the number of lost time accidents was but 23 as compared with 61 in the calendar year 1936, a reduction of 62 per cent.

All departments contributed toward the reduction of lost time accidents during 1937 with the chipping plant showing the greatest reduction in number of accidents.

OLYMPIC FOREST PRODUCTS CO
ACCIDENT RECORD
WHITE LIGHT • NO LOST TIME ACCIDENTS
RED LIGHT • LOST TIME ACCIDENT
BULLETINS
DAYS WITHOUT LOST TIME ACCIDENT
6
DEPARTMENT
DAYS WITHOUT A LOST TIME ACCIDENT
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC TOTAL 1936 TOTAL
NUMBER OF LOST TIME ACCIDENTS
SAWMILL 136 0 0 0 0 1 2 0 1 0 0 0 0 4 9
DOCK YARD 126 0 0 0 0 0 0 0 1 0 0 0 0 1 5
CHIPPING PLANT 14 0 0 0 0 1 0 0 0 0 1 0 1 3 18
SULPHITE MILL 257 0 0 0 0 1 0 0 0 0 0 0 0 1 5
MACHINE ROOM 6 0 0 0 0 0 0 0 0 0 0 0 1 1 2
FINISHING ROOM AND WAREHOUSE 169 1 0 1 0 1 0 1 0 0 0 0 0 4 6
POWER PLANT 238 0 0 1 0 1 0 0 0 0 0 0 0 2 5
MAINTENANCE 38 0 1 0 2 0 0 1 1 0 0 2 0 7 9
LABORATORY 404 0 0 0 0 0 0 0 0 0 0 0 0 0 2
GENERAL 2764 0 0 0 0 0 0 0 0 0 0 0 0 0 0

ACCIDENT REPORT BOARD at the Port Angeles bleached sulphite pulp mill of RAYONIER INCORPORATED, showing the red and white light system » » » White lights indicate departments and months with no lost time accidents » » » Red lights indicate lost time accidents and remain lighted for balance of calendar year.

What Does the Bonneville Dam Mean to the Pacific Northwest Pulp and Paper Industry?

by RAYMOND M. MILLER*

THESE were some of the questions confronting the Corps of Engineers, North Pacific Division, in the course of its studies of possible outlets for power from the Bonneville project, and because of the tremendous importance of the pulp and paper industry to Northwest communities as taxpayers, employers of its citizens, and as a necessary factor in the program of forest conservation, a general survey of the Northwest industry was begun by the Division to determine the status it would have as a possible customer for more power, in both the immediate and the distant future. The study was completed in 1936, and covered data for the year 1935 which was an active year in Northwest mills.

A survey of the power equipment of Columbia River mills was the first step. The Forest Service undertook the survey of the pulpwood situation, also limited to the Columbia River area. Then the statistical position was studied with the assistance of the Portland Chamber of Commerce; general conclusi o n s were drawn; and the report was compiled in 1937 to include a discussion of the essential information and data gathered.

- **What are the power needs of the pulp and paper industry?**
- **Can Columbia River mills take any part of the Bonneville power load when available for distribution?**
- **What possibilities exist for the pulp and paper industry to expand?**
- **Would low power rates attract news print capacity with its heavy power-using electric grinders?**
- **Is there sufficient pulpwood to support additional capacity?**
- **What about electric boilers? Are they feasible under conditions existing in the area?**

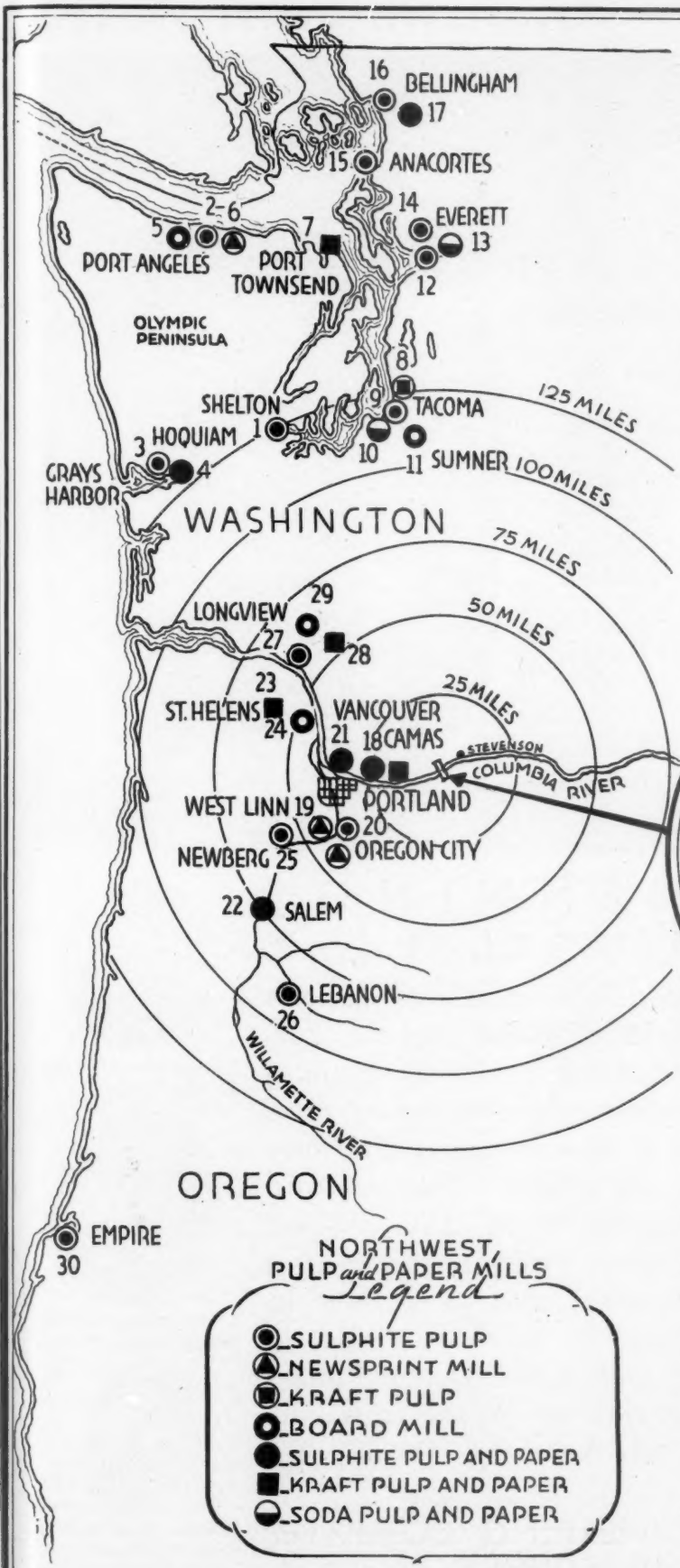
● The first issue of the report, published under the date of June 1, 1937, with the general title "The Pulp and Paper Industry of the Pacific Northwest," has already been exhausted, and a second issue is being prepared for distribution, with requests steadily coming into the Division Office. This is some cause for satisfaction for the work that has been done, for though much effort was expended to make the report thorough and accurate, there are always times when a question arises as to the usefulness of certain details. However, many inquiries that have come to the writer from financial houses, banks, and others with little understanding of the status and fundamentals of the industry, seem to have justified discussion of points and inclusion of data with which the industry itself is thoroughly familiar.

What does the Bonneville dam mean to the pulp and paper industry o f t h e Northwewst? Generally speaking, this is yet to be answered since it depends entirely upon the policy which will be set by the Federal Power Commission and the Administrator whose task it is to find a market for the output.

When it is considered that the project will develop, with ten generator units, a total of 432,000 kilowatts, while the four large utilities now supplying Columbia River mills have a total capacity of only 352,632 kilowatts, steam and hydroelectric, it seems likely that there will be a surplus of power for several years to come unless rates are set low enough to bring about reasonably quick absorption of the output by industries. Reason dictates that this should be done up to the limit of the fifty per cent allocated to industrial use by the Bonneville Bill.

● The pulp and paper mills are the largest single users of industrial power in the Columbia River area, and are important customers of the utilities supplying them. They need relatively large blocks of power, cheap power. Their load factor is high during normal operation, and shutdowns are generally infrequent. Employment for labor is steady and their workers are well paid. They bring stability to their communities with year-around pay rolls. Their raw material is replaceable in the forests, insuring permanence of the industry, and lastly, their products are steadily increasing in demand in the United States as well as throughout the world. The greatest service that can be performed for the people of the states of Washington and Oregon is to lend all possible encouragement to the pulp and

*Consultant, North Pacific Division, Corps of Engineers, Portland, regon.

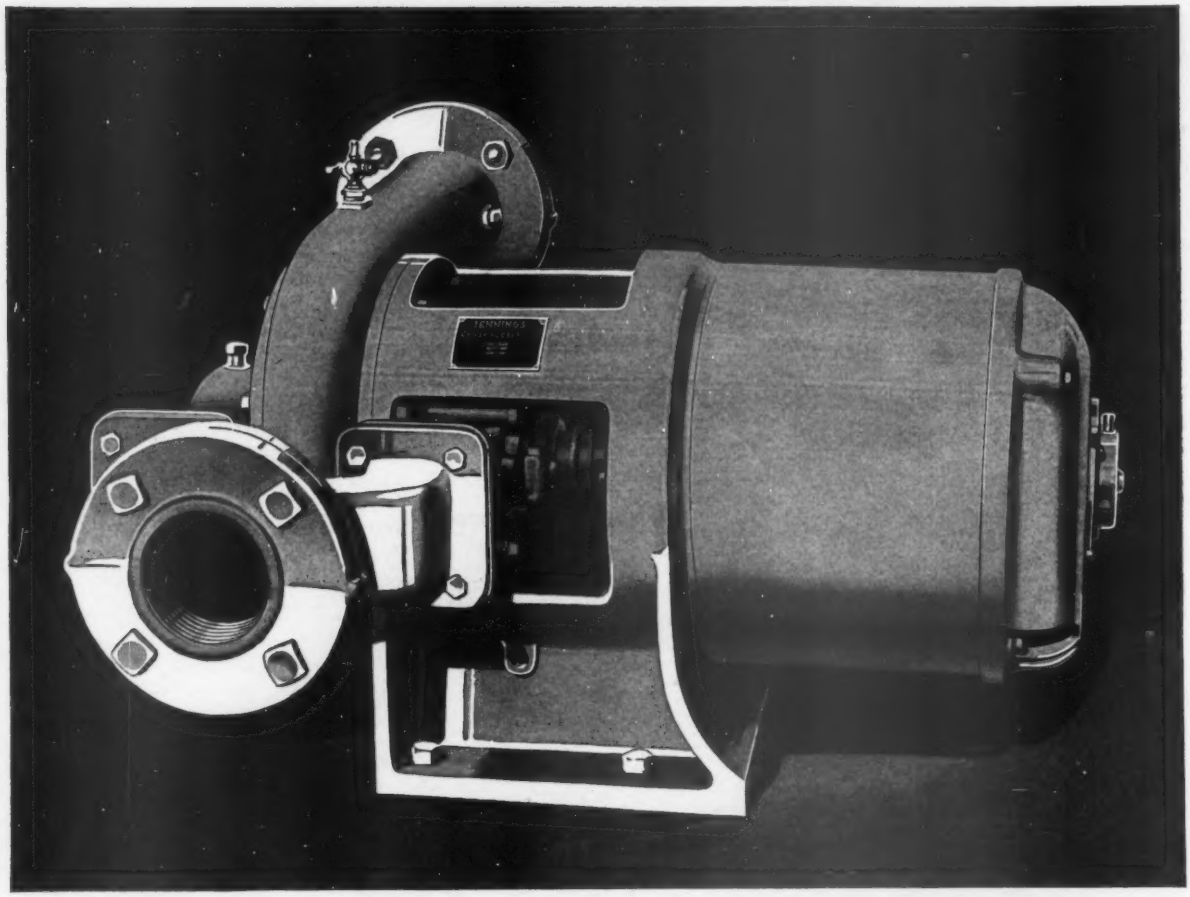


Puget Sound-- Olympic Peninsula-- Grays Harbor

1. Rayonier Inc. (Dissolving Pulp)
2. Rayonier Inc. (Dissolving Pulp)
3. Rayonier Inc. (Dissolving Pulp)
4. Grays Harbor Corporation.
5. Fibreboard Products, Inc.
6. Crown-Zellerbach Corporation.
7. Crown-Zellerbach Corporation.
8. St. Regis Kraft Company.
9. Rayonier Inc.
10. Everett Pulp & Paper Co. (Paper Mill).
11. Fibreboard Products, Inc.
12. Weyerhaeuser Timber Company.
13. Everett Pulp & Paper Co. (Soda Mill).
14. Soundview Pulp Company.
15. Puget Sound Pulp & Timber Co.
16. Puget Sound Pulp & Timber Co.
17. Pacific Coast Paper Mills.

Columbia River Area

18. Crown-Zellerbach Corporation.
19. Crown-Zellerbach Corporation.
20. Hawley Pulp & Paper Co.
21. Columbia River Paper Mills.
22. Oregon Pulp & Paper Co.
23. St. Helens Pulp & Paper Co.
24. Fir Tex Insulating Board Co.
25. Spaulding Pulp & Paper Co.
26. Crown-Zellerbach Corporation.
27. Weyerhaeuser Timber Co.
28. Longview Fibre Company.
29. Pacific Straw Paper & Board Co.
30. Coos Bay Pulp Corporation.



Non-Clog type impeller for solids up to ½ inch.

If solids run up to ⅞ in. this will do the job.

An impeller for heavy sewage with solids up to 2⅜ inches.

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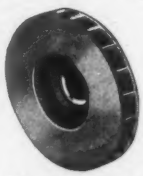
Manufactured in a variety of designs to meet individual plant needs. Furnished in standard and self priming types. Standard close coupled type shown above is very compact and may be installed anywhere. Suction and discharge assembled in any desired position. Impeller designs engineered for high efficiency, and in variety to meet any type of service. Also in unit assembly with Nash Vacuum Pumps for combinations of liquid and air. Bulletin 236 tells the story. Your copy is waiting.

NASH ENGINEERING COMPANY
SOUTH NORWALK, CONNECTICUT, U. S. A.

Efficient closed impeller for clear liquids.

A closed impeller for Double Suction Pumps.



This Air Rotor makes our Suction Centrifugals self priming.

Power Source.	Total Capacity (Kw.)	Hydroelectric Capacity (Kw.)	Steam Capacity (Kw.)	Mills Served
Bonneville Dam	432,000	432,000	...	...
Public Utilities, total, 1937	352,632	159,400	193,232	11
Portland General Electric Co.	181,190	93,190	88,000	6
Northwestern Electric Co.	109,000	61,000	48,000	2
Washington Gas & Electric Co.	34,000	...	34,000	2
Mountain States Power Co.	28,442	5,210	23,232	1

paper industry to permit it to develop normally without undue stimulation or ill-advised restriction.

With these thoughts in mind, we might go a little further and say that Bonneville stands ready to serve the industry and its communities, with a generating capacity sufficient to support an added capacity of several times the present needs. Whether service is given by building trunk transmission lines into the consuming territory for distribution by public power districts, or by feeding added power into the lines of utilities for distribution, is a matter of power policy that need not be considered here. The important thing is that the capacity is there to be made ready for service as the demand develops.

● What are the power needs of the pulp and paper industry? Columbia River mills use direct water power, hydroelectric power, steam generated electric power, direct steam power, and purchased electric power. The power purchased by eleven mills, including the Weyerhaeuser Timber Company bleached sulphite mill at Longview, which is supplied by the company's own central steam power plant, amounted to 352,654,691 Kwh. in 1935. Only three of these mills are 100 per cent electrified.

The total consuming capacity of the power equipment amounted to 125,672 kilowatts, including turbo-generators, steam engines and turbines, water turbines, and the plant hydroelectric installations. Although it was physically impossible to accurately calculate the total power consumed because of lack of complete records, an approximate calculation indicated a power usage in 1935 in recorded kilowatt hours and the calculated equivalent in direct steam and water power of 642,230,000 kilowatt hours. The purchased electric power represented only about 55 per cent.

● This applies to the eleven largest mills from Longview to Salem, all within a 75-mile radius of Bonneville dam, but does not include two small mills at Lebanon and Empire, Oregon, in which usage may be estimated at 15,000,000 Kwh. normally per year, nor the six Hoquiam, Shelton and Tacoma mills within a 125-mile circle centering at Vancouver.

The individual needs of the plants for power vary with the product, sulphite pulp being of the least importance from a power consumption point of view, and news print the heaviest power consumer. In practice, the following average consumption figures may be considered representative:

Type of Product.	Power Consumption Per Short Ton (Kwh.)
Groundwood*	1300 - 1350
Unbleached sulphite pulp	275 - 325
Bleached sulphite pulp	350 - 400
Bleached sulphite, refined	400 - 450
News Print	1340- -1450

*Grinding alone = 1170 Kwh. for newsgrade.

● While these are round figures, actual yearly records on various plants vary above and below. Other papers than news print may range from around 1200 Kwh. per ton upward, depending upon the type and grade, and assuming the mill to be entirely electric motive powered.

Can Columbia River mills take any part of the Bonneville power load when available for distribution? Those mills most interested in Bonneville power are the ones within the 75-mile circle from the dam. Their interest naturally lies in the possibility that they may be able to obtain a reduction in power rate and effect some savings in the cost of their purchased load, now ranging from 4.3 to 5.4 mills per Kwh. for firm, additional and excess power, depending upon the demand and load factor. They are less concerned with the substitution of purchased electric power for direct steam power or turbo-generators. Nevertheless, a rate reduction sufficiently below the present would warrant a study of the power set-up of each individual operation to determine what possibilities, if any, exist for economies by such substitution.

Direct drive steam power and turbo-generator capacity in the Columbia River area total 24,269 kilowatts as follows:

	Capacity	No. of Mills
Steam turbines and engines, 8864 h.p.	6,604	6
Turbo-generators	17,665	8
Total capacity	24,269	

● What possibilities exist for the pulp and paper industry to expand? Practically all of the expansion taking place in the Northwest is in the field of bleached and unbleached sulphite pulp. With a continually expanding market for this type of pulp in the Eastern states and a steadily increasing demand for so-called dissolving pulps for rayon manufacture in Japan and our own Eastern industry, Northwest pulp mills are in an advantageous position. The quality of Western hemlock sulphite for both paper making and rayon cellulose is well known, the Northwest product having grown to a commanding position in the rayon market practically during the depression period.

Sulphite pulp competition comes from Sweden, Canada and Finland, the Canadian product being chiefly bleached, and the Swedish and Finnish sulphite unbleached. Northwest sulphite is both bleached and unbleached. In the matter of transportation, Sweden has the advantage over both Northwest and Canadian mills in Atlantic Coast markets, with rates quoted as follows (table on following page):

● Northwest mills are about on a par with the mills along the Ottawa and St. Maurice Rivers, and have some advantage in Atlantic Coast markets over the Northern Quebec and Ontario mills.

The market during the past year, however, has been a seller's market, prices were high, and pulp scarce, so that differentials in transportation rates meant little. During this time Northwest pulp mills have expanded their capacities and some new construction is still under way.

Would low power rates attract news print capacity? A low power rate is essential to the operation of all news print mills, but this is only one factor, transportation being of considerably more importance in the Northwest.

● The general thought with regard to news print was that, with the declining spruce resources of the Northeast and Lake states, the continued migration of news print producers to Canada, and the less important, though appreciable, volume of imports from Scandinavian producers, the Pacific Northwest spruce and hemlock should come in for

WATER RATES	From	To	Rate Per Ton
Chemical pulp	Sweden	Atlantic Coast	$4.00 metric ton
	Pacific Northwest	Atlantic Coast	6.50 short ton
	New Brunswick	Atlantic Coast	4.75 short ton
RAIL RATES			
Woodpulp	Pacific Northwest	Illinois	$11.00
		Ohio	12.00
		Atlantic Coast	12.00 40-ton minimum
	St. Lawrence River	Illinois	$6.80
		Detroit-Toledo	4.80
		Atlantic Coast	6.20 — 6.90

some attention. Generally speaking, this is true, but with the demoralized condition of the news print industry over the past decade from the steady decline in news print prices, the possibility of a Northwest plant supplying the Eastern market by either rail or water shipments has not been promising.

The market for our present news print production, aside from the small tonnage consumed locally, is chiefly in California, the Mountain States, and the Southwest; but even on the Pacific Coast, European importers offer serious competition to the Northwest product, supplying 86,753 tons to the market in 1936, chiefly entering the San Francisco and Los Angeles customs districts. In the Southwest these countries, and the Canadian and Newfoundland producers entered Texas customs districts with 106,577 tons. When our natural markets for news print are being substantially supplied by foreign competitors, possibility that new Northwest capacity could enter the North Central and Eastern markets, in competition with Canadian and European news print having much lower freight rates, seems somewhat remote. **Low power rates would not counterbalance the transportation advantages of foreign competitors in these markets.**

● Obviously then, as long as news print prices are so low as to give only a narrow margin of profit, the Northwest producer would prefer to gauge his operation to Western markets in which he has some transportation advantage.

It is quite possible, however, that a plant operated under publisher ownership or control, or with a long term contract to provide some little profit, accompanied by a freight rate to the consuming points in the East approximately equal to the rate from the competitive Canadian industry, could operate successfully in the Columbia River area by using seasonal power for its grinders and firm power for its sulphite plant and paper mill. This would be contingent upon acquisition of timber land or leases to supply the hemlock and spruce required.

Cost of production in the Columbia River area has been estimated by Griswold at $34.67 f.o.b. mill under 1933 conditions. Under present conditions, with increasing costs of labor, pulpwood, fuel and other materials, this figure would be increased considerably. Transportation by water to San Francisco is $5.00 per ton; to Los Angeles, $6.00 per ton; and by rail to the Chicago and St. Louis area is $20 per ton. With the 1937 price of news print at $42.50 per ton delivered, and cost of production on the order of $35 per ton, not including returns on capital, the maximum transportation possible could hardly exceed $7.50 without the producer selling at a loss. The 1938 price of $50.00 will give an increased margin of profit which will widen the market area and increase the possibility of additional production in the Columbia River area.

● **Is there sufficient pulpwood to support additional pulp capacity? The Northwest pulp and paper industry has not yet reached the maximum capacity potentially possible with its pulpwood resources and growth rate.** Throughout the Douglas Fir Region, the pulpwood inventory of the Northwest Forest Experiment Station shows a total of 378,394,000 cords available, with a current annual growth rate of 3,070,000 cords, and a growth potentially possible of 9,907,000 cords. In the Columbia River area, Hoffman, in Part II of the Engineers' Pulp and Paper Report, shows 10,014,600,000 cubic feet, equivalent to 116,448,800 cords, available for cutting in saw-timber stands 16" DBH and larger, with a possible cutting budget of 1,379,000 cords under the present standards of utilization, and a potential annual growth of 2,317,000 cords, this being considered the growth possible when all mature stands have been cut and the land restocked to 75 per cent of normal.

Including lumber, plywood, cooperage and export, Hoffman shows a yearly consumption of 1,342,242 cords of the pulpwood species in the Columbia River area, and concludes that, while the present growth will supply but little more than the present rate of use, ultimate attainment of the maximum growth and improved forest practices will increase the available pulpwood 975,000 cords over the present usage, sufficient to about double the present capacity of pulp production in the area.

● What about electric boilers? Are they feasible under conditions existing in the area?

Economically feasible as a profitable power load for Bonneville dam? No. But as an outlet for unsold or surplus firm or seasonal power, electric boilers could be used to advantage in the mills in the vicinity of the dam so long as the load can be delivered without additional costs incurred in transmission lines, and only so long as there are no other outlets.

In practice, the power consumed in evaporating 1000 pounds of water is usually around 290 to 308 Kwh., or 3.44 to 3.25 pounds of steam per Kwh., with 98 to 95 per cent boiler efficiency respectively. The actual cost of steam generation in a large well-known Canadian paper mill operation is reported at 3.93 cents per 1000 pounds for labor, fixed charges, and all other costs not inclusive of power or interest on the investment. Thus, with a 1 mill power rate, the cost of generation amounts to 34.73 cents, as shown in the table below. For comparison, costs estimated on the basis of comparable operations in the Columbia River area using hogged fuel fired boilers are 7.25 cents for labor, fixed charges, and all other costs, and 13.0 cents for the fuel, or a total generation cost of 20.25 cents per 1000 pounds, when the hogged fuel cost is $1.50 per unit of 200 cubic feet. If fuel oil is used at a cost of $1.25 per barrel, which is the present posted price plus a 10 cent barge delivery charge, the fuel cost would be 25.9 cents per 1000 pounds of steam generated, and using the same power plant set-up as for hogged fuel, the total cost of generation would be 33.15 cents per 1000 pounds.

Quality
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SHIPMENTS

Comparison of Cost of Steam Generation by Fuel Fired Boilers Using Hogged Fuel and Fuel Oil, and By Electric Boilers, Both for Units Capable of Supplying the Total Steam Demands of a Pulp and Paper Mill (per 1000 pounds).

Cost Item.	Fuel Fired Boilers — Hogged Fuel at $1.50 Per Unit	Fuel Fired Boilers — Fuel Oil at $1.25 Per Bbl.	Cost of Steam Per 1000 Pounds in Electric Boiler * — Power at 1 Mill Per Kwh.	Power at 0.8 Mill Per Kwh.	Power at 0.5 Mill Per Kwh.
Fuel (or power)	$0.1300	$0.259	$0.3080	$0.2464	$0.1540
Labor	0.0175	0.0175	0.0142	0.0142	0.0142
Fixed charges**	0.0350	0.0350	0.0210	0.0210	0.0210
All other costs***	0.0200	0.0200	0.0041	0.0041	0.0041
Total Per 1000 Pounds	$0.2025	$0.3315	$0.3473	$0.2857	$0.1933

*Power consumption 308 kwh. per 1000 pounds at 95 per cent boiler efficiency, or 3.25 pounds steam per kwh. from and at 212° F. Except for power cost, data are actual for a large Canadian operation.
**Not including interest on investment, but includes depreciation, taxes, insurance.
***Maintenance and miscellaneous costs.

● These comparisons illustrate the possible status electric boilers would have in this district. They are for efficiently operated plants of large capacity. When the Columbia River pulp and paper mills are using a large amount of hogged fuel in their boiler plants at costs ranging generally from $1.50 per unit downward, it is obvious that electric power must be well below 1 mill per Kwh. to make electrical generation of steam practical.

Since only surplus power could be used, the boilers would have to serve as auxiliary equipment operating when such surplus firm or seasonal energy were available, while at other times the fuel fired boilers would have to take the load. The maintenance and capital costs of both units would thus be charged against the production of one. Under these conditions the combination of electrically generated steam with the steam of the fuel fired boilers, and the added maintenance and capital charges of the extra unit, could not exceed in cost that of the present hogged fuel and fuel oil generated steam. Present cost in this district, while varying from mill to mill, will probably average, with the usual ratio of hogged fuel and oil used, about $0.26 to $0.28 per thousand pounds. For such an average cost the use of electric boilers would necessitate a power rate of about 0.7 mill per kilowatt hour. Individual cases will vary this, of course, but this figure can be used as a very close approximation. Reported rates for Canadian mills range from 0.5 mill to 0.8 mill.

Conclusion

● **In conclusion, while the availability of Bonneville power may not of itself be expected to give an impetus to further pulp and paper mill construction in the area, it will serve to supply all of the additional power needed by the normally expanding capacity of present mills, and to furnish adequate power for some time to come for the development of new capacity if and when this takes place within the economic transmission range of the dam. Its importance to the industry depends upon the rate at which it can be delivered, being of little or no interest at those points where the cost approaches 5 to 5½ mills per Kwh., and low cost hogged fuel is available, and of considerable interest where the rate may approach 2½ mills for firm and 1½ mills for seasonal energy.**

Ocean Falls Paper School in Session

The night school course in pulp and paper making at Pacific Mills, Limited, Ocean Falls, B. C., is under way with twenty-nine students enrolled. Under the direction of Larry Harris the school meets for two hour sessions two nights each week for sixteen weeks.

Eighteen lectures are being given by the foremen of the several departments covering logging, cut-up mill, groundwood, sulphite, sulphate, screening, refining, beating and coloring, newsprint and specialty manufacture, finishing, steam, electricity, pulp and paper testing, mill maintenance, cost control, company policies and history.

Ten sessions are spent in the department which was lectured on at the previous session. This method has been found highly successful due to the cooperation of the foremen and shift bosses. Another instructive practice is the slowing down or stoppage of various pieces of equipment which are opened up and the principles of operation studied by the class. Mr. Harris expects to have one or two lectures by visiting specialists.

Note taking has been promoted by furnishing each student with a flowsheet covering the evening's talk and study at the beginning of the session. Lecturing by the foremen has proved popular providing a mutual interest among the foremen and the students which enables the students to obtain additional information apart from the school sessions.

R. E. Chase Acquires Two New Accounts — Two New Offices

Roger E. Chase of R. E. Chase & Company, Tacoma, Northwest representative for a number of well known lines of equipment, attended the Chemical Show in New York City early in December.

Returning home shortly before Christmas Mr. Chase brought with him two new accounts, the Combustion Engineering Company, Incorporated, and the Terry Steam Turbine Company. Mr. Chase's representation of these two manufacturers becomes effective as of January, 1938.

The Combustion Engineering account represents a consolidation of the office of Hary S. Bastian, consulting power plant engineer in the Railway Exchange Building in Portland with Mr. Chase's organization. Mr. Bastian, who has represented the Combustion Engineering Company, Incorporated, for several years, will continue as manager of R. E. Chase & Company's Portland office, handling power plant work and representing their other accounts. Oregon, Washington, Idaho, Montana and Alaska will be covered for Combustion Engineering.

The Terry Steam Turbine Company of Hartford, Connecticut has a number of steam turbines in service in the Pacific Northwest. Mr. Chase's organization will represent Terry in the same territory as Combustion and also in British Columbia.

R. E. Chase & Company also have a representative in Spokane at 1823 South Maple Street.

Returning from the Chemical Show, Mr. Chase reported that it was highly successful with much more business being transacted than at any previous show. It was attended by a larger number of important executives than in previous years. Exhibits showed progress in alloys, instruments and in other types of equipment for chemical plants and for industries employing chemicals in their manufacturing processes.

Hodges Making Trip East

Walter S. Hodges of Portland, paper machine clothing representative, left December 26th on an extended Eastern trip which will bring him back to Portland around the first of February.

Mr. Hodges stopped first at Piqua, Ohio, to attend a sales meeting at the headquarters of the Orr Felt & Blanket Company. From there he went to Philadelphia to take part in another sales meeting at the plant of the Asten-Hill Manufacturing Company.

His next stop was at Woonsocket, Rhode Island, where the American Wringer Company was holding a similar meeting. Before returning home Mr. Hodges planned a visit in Montreal and other Canadian points and at the Appleton Wire Works, Appleton, Wisconsin.

San Francisco Box Makers Hold Annual Banquet

Honor Pioneer Bay Box Makers

• The annual banquet of the San Francisco division of the Pacific Coast Paper Box Manufacturers' Association was held at the Lake Merced Golf and Country Club on Thursday, December 9th.

It was one of the largest gatherings in the history of the local association, according to Hugh Peat, secretary of the Pacific Coast Association. Every manufacturer in San Francisco and the Bay Cities, with one exception, both folding and set-up, was represented. Eighty-seven members and guests sat down to an excellent banquet.

Messrs. Grosjean and Allen of the Fibreboard Products, Inc., and the Western Paper Box Co. respectively, who had charge of the banquet arrangements, did a splendid job. Not only was the dinner excellent but the entertainment provided left nothing to be desired.

Mr. Allen, co-chairman with Mr. Grosjean, welcomed the members and guests to the annual banquet of the Association and expressed his pleasure and satisfaction because of the splendid attendance, an attendance which he stated would have been still greater had it not been for the inclement weather. The speaker announced that tickets would be distributed and that holders of the lucky tickets would each receive one of the door prizes which had been provided by the banquet committee.

Chairman J. C. Meyerstein was called upon and spoke as follows:

"In asking you to pause for a few minutes in doing whatever you are doing to listen to me, I suspect that I am not exactly suggesting a pause that refreshes. My excuse for interrupting you is not that what I have to say warrants the interruption, but rather the persons about whom I intend to say it. Before I mention their names, let me say this—one of the things that makes an industry worth-while, and when I say worthwhile I mean not alone to those in it, but to the community—is that it has some permanence; because to say that it has permanence is just another way of saying that it has stability. What better proof of that stability can there be than that men can engage in it in early youth and stay in it—stay in it successfully and creditably for a lifetime. Now, do you know, there are here tonight four men whose devotion to this industry covers in the aggregate two hundred and seven years? They are the persons about whom all this is said. And lest it seem too long, I am going to ask them to stand right next to me until I conclude."

(He called Mr. Louis Thiebaut, Mr. J. J. Thiebaut, Mr. F. W. Kewell and Mr. Addison N. Himes to the table and spoke as follows:)

"I am sure that you will not take amiss even an oblique reference to your age. If you are at all sensitive about it, I hasten to put myself in the same class as far as ages are concerned. Two of you are slightly older, but two of you are slightly younger, so I am myself a fair average of the four.

"Gentlemen, three of those who now stand with me have been in this business for over fifty years and one for almost that length of time—all of them "box makers since the eighties"—the only ones here or in the Bay region who have been box makers that long. Each of them has a son in the business who is present. That long service in any craft is itself an honor to any man.

"Anything that your fellow craftsmen may do about it cannot add to that honor. But they can express their recognition of it, and these mementos which in their behalf I now present to you represent that expression of their feeling that you have not only been "box makers since the eighties," but that the half century of your service in the craft has been a half century of service to the craft, because you have contributed so much to building it from an unimportant, almost casual trade, to a real and useful industry, preserving at all times those principles of fair dealing to customer, to labor and to competitor, which mark the best in business and enable a man not only to look any man in the eye, but to look himself in the eye when he goes home at night and looks in the mirror."

Chairman Meyerstein presented leather wallets to each of the old-timers mentioned. These mementos were unique in that each was embellished with a gold plaque, suitably engraved, and will be a lasting memorial of the esteem in which the recipients are held by their fellow boxmakers.

The inscriptions were as follows:

"To L. A. Thiebaut, boxmaker since the seventies, from S. F. Div. Pacific Coast Paper Box Manufacturers Association, 1779-1937."

The wallets presented to the other three were similarly inscribed except for the dates of their service. For J. J. Thiebaut the dates were 1886-1937; for F. W. Kewell, 1887-1937; for A. N. Himes, 1889-1937.

Chairman Meyerstein called upon Fred C. Kewell, president of the Pacific Coast Paper Box Manufacturers' Association, for a few remarks.

Mr. Kewell responded saying that he was proud to see such a wonderful crowd present, representing as it did 100% of the box manufacturers in San Francisco and the Bay Cities. He expressed the hope that the good feeling which was apparent at the gathering would continue throughout all business relationships.

Golf Tournament

In spite of the inclement weather, sixteen enthusiastic golfers, and they had to be on such a day, sallied forth into the rain to try conclusions with one another or with the elements, or something.

Par for the course is 72 and Bill Higgins with all the handicaps presented by a wind and rain-swept course turned in a gross of 79, handicap 5, net 74, a creditable performance.

Tournament winners were as follows:

	Gross	Handicap	Net
Bill Shattuck	82	10	72
Cliff Mattos	87	14	73
Bill Higgins	79	5	74
Gus Frost	92	18	74
Bill Schulte	92	18	74
Max Schmidt	95	19	76
Walter Schulken	88	12	76
G. J. Ticoulat	86	10	76

HONORED BY FELLOW BOX MAKERS » » » For their long and distinguished service to the industry in the San Francisco Bay region, L. A. THIEBAUT (reading left to right), F. W. KEWELL, J. J. THIEBAUT and A. N. HIMES, were honored at a banquet and presented with inscribed wallets by the San Francisco Bay Division of the Pacific Coast Association of Paper Box Makers

Trade Talk

of Those Who Sell Paper in the Western States

Bonestell Moves After 30 Years on First St.

For exactly thirty years Bonestell & Co., San Francisco paper jobbers have been located on First Street, between Howard and Mission streets.

Now the San Francisco-Oakland Bay Bridge rail terminal is being completed right across the street from them and they are moving around the corner to a location on Howard Street between First and Second streets. Their present location will likely be given over to small stores and shops, such as usually found around rail terminals. They'll be at their new address on May 1.

The present quarters have 30,000 square feet of space and the new location, consisting of three stories and a basement, will have 40,000 square feet.

H. S. Bonestell, head of the company, recently returned, with Mrs. Bonestell, from an exciting vacation trip to Japan, Manila and other far eastern points, where they were in the midst of war activity.

Hammermill Giving Sales Course

Hammermill Paper Co. of Erie, Pa., has enrolled all of its advertising and sales people in the Sales Analysis Institute, which gives lectures and working schedules in sales work. On the coast the course is being taken by B. P. (Doc) Jaggard of the firm's San Francisco office.

Amos-Zucca Marriage Kept Secret

Announcement is made of the marriage in September of Miss Billie Zucca, for some years secretary to Louis A. Colton, vice-president of Zellerbach Paper Co., San Francisco, to Walter Amos, a Zellerbach salesman there. News of the nuptials was kept secret until the holiday period.

Paper mill representatives from all parts of the country are included in the new Mrs. Amos' many friends, for they all call on Louie and all knew the bride. Mrs. Amos left the Zellerbach employ in January.

Davis Heads Zellerbach Club

New president of the Zellerbach Recreation Club of San Francisco is Jim Davis, salesman with the Zellerbach Paper Co. for 30 years.

BM&T Hold Sales Conference

Some sixty northern California salesmen of Blake, Moffitt & Towne gathered at the headquarters building, San Francisco, late in December for a three-day conference, presided over by O. W. Mielke, general manager. A talk on the history and spirit of the organization was made by Arthur W. Towne and sales on their department problems were made by L. L. Liston, assistant secretary, and W. E. Jackson of the credit department. The meeting closed with a dinner.

Newsprint Price Expected to Hold

● While publishers were complaining to Premier Mitchell Hepburn of Ontario and Premier Duplessis of Quebec that increased cost of newsprint would add $25,000,000 to their expenditures this year and arguing for reduced prices, Canadian newsprint manufacturers were holding tight, regarding the $50 a ton price recently fixed as the lowest figure at which they could reasonably be expected to sell their product.

Executives of Powell River Company and Pacific Mills, the two British Columbia newsprint mills, intimated that the west coast paper companies would probably stand by the $50 price regardless of what action might be taken in the east; but they expressed doubt that the easterners would weaken.

"Even a $50 we are not charging a price high enough to pay for increased costs of production," said William Barclay, manager of Powell River Sales Company. Other newsprint men said that the increase of $7.50 was virtually forced on the industry because of the increased labor costs.

"The labor cost factor is more important than ever before," one newsprint operator told Pacific Pulp & Paper Industry. "The mills are almost 100 percent unionized now. We don't pay wages in accordance with what we expect to get for our product in relation to costs. We pay them in accordance with what the unions demand. That's all cut and dried for us now; there's no leeway one

CHRISTMAS PARTY for underprivileged boys » » » Annual event arranged by the PAPER MILL MEN'S CLUB of Los Angeles » » » About twenty-five boys ranging in age from 11 to 16 years were guests, enjoying a turkey dinner and Christmas presents which included a fine sweater for each boy.

way or another, as there used to be. And that being the case we know in advance what our labor costs are going to be and we can set an arbitrary price and stand by it, knowing that if we don't we're going to lose just that much money, because wages are not under control of the companies as they used to be. When the newspapers increased wages and salaries, who paid the difference? The newsprint industry. Well, we're not going to carry that load any longer. We simply can't afford to do it. Our own labor costs won't let us."

• The situation that has caused some uneasiness among eastern mill operators is the heavy accumulation of stocks by publishers during the latter part of 1937 to take advantage of the old price. At the beginning of December stocks on hand and in transit to American publishers totalled 555,290 tons, equivalent to 68 days' supply. This is the largest total ever recorded and compares with 270,993 and 264,376 tons in 1936 and 1935 respectively. Manufacturers are curtailing production, feeling that the first quarter of this year will be the hardest.

Wilkinson Makes First Coast Visit

Charles H. Wilkinson, president of The Kent Paper Co., Inc., New York City, was on his first coast visit in January. In San Francisco he called upon W. J. McCormick, American Writing Paper Co. The Kent company does all of the converting for American Writing Paper Co.

REDDY KILOWATT

Your Electrical Servant, Says:

"The New Year starts
With noise and bang—
Greetings to you
And all your gang!"

★

PUGET SOUND POWER & LIGHT COMPANY

"To Best Serve the Public Interest"

Import Committee Reports Increase Import Values

Customs officials at New York have classified shipments of Scandinavian envelope kraft paper and kraft twisting paper for duty at 30 per cent as paper not specially provided for, not admitting the shipments as wrapping paper at 20 per cent under the Finnish and Swedish reciprocal trade agreements.

At Jacksonville a large importer of kraft bag paper has refused to accept the customs valuation and has been forced to give bonds—probably nearly $250,000—to secure the release of his paper. In addition, if the courts sustain the action of the Collector of Customs, he will face penal duties of approximately $50,000.

Investigation by the Import Committee of the American Paper Industry at various Atlantic and Gulf ports indicates that there have been advances in recent months in the foreign prices for various pulp boards. The Finnish market price for wood pulp pie plate board has increased from $32 to $38 per ton. The Finnish value of laminated pulpboard is the same as for the solid sheet, indicating that the foreign value on which duty is collected is not the ruling export price, though sales are apparently made at the above low figures for the small quantities used in the Finnish market, to establish a low base for computation of duties on the far larger quantities sold for export.

Recent importations of beer mat board also indicate an advance in price in the foreign market.

Action of Customs officials in imposing duty on the basis of the cost of production on shoe counter board imported from Germany, instead of on the actual sale price has been followed by an increase in the delivered price of this board of about $10 per ton.

Sidney Willson In Tuscon

S. L. Willson, retired president of the American Writing Paper Co., is with Mrs. Willson wintering at Tucson, Arizona.

Dunn to Confer With Secretaries

H. Arthur Dunn, San Francisco, leaves late in January to visit the paper conference secretaries of Portland, Seattle and Spokane in his capacity as general counsel for the Pacific States Paper Trade Association.

Portland Chamber Has Pulp Development Program

Prominent on the 1938 program of the Portland Chamber of Commerce will be the encouragement of advancement of the pulp, paper, rayon and related industries using forest products in the Columbia River area. This was recently set forth by the Chamber as one of the major development activities of the organization during the coming year.

To date, the chief functions of the group has been along educational and research lines, laying a groundwork of information which can be used in aiding growth of the industry. The work is headed by W. D. B. Dodson, executive vice-president of the Chamber, Walter May, manager, Arthur J. Farmer, assistant manager in charge of industries, and Frank M. Byam, research specialist who is secretary of a recently formed Pulp and Paper Committee.

This committee has been meeting regularly and lending its aid in the assembling of necessary research data. It is composed of 24 men prominent in the lumber and pulp industry and others which are closely allied.

The members of the group are C. J. Kinney, Clark & Wilson Lumber Co.; T. J. Autzen, Portland Manufacturing Co.; T. H. Banfield, Iron Fireman Co.; E. S. Collins, timber owner; Thomas Dant of Dant & Russell; H. A. Des Marais, General Dyestuff Co.; Alex Duncan, Paper Makers Chemical Co.; Dr. Leo Friedman, head of chemistry department at O. S. C.; George Frogner, former paper man now with Langdon Electric Co.; George Gardner, engineer; Louis Gerlinger, Jr., lumberman; Bruce Hoffman, U. S. assistant regional forester; E. B. McNaughton, First National Bank; B. T. McBain, pulp and paper consultant; Raymond Miller of the U. S. Army Engineers; Thornton T. Munger, director of the Pacific Northwest Forest Experiment Station; J. C. Plankinton of the General Electric Corp.; O. L. Price of the Oregonian; S. R. Winch of the Journal; Frank H. Ranson, Eastern & Western Lumber Co.; John H. Smith, Hawley Pulp & Paper Co.; H. B. Van Duzer, Inman-Poulsen Lumber Co.; Lloyd J. Wentworth of the Douglas Fir Exploitation and Export Co., and James Zancker of the Lit-Rite Corp.

PULP
BLEACHING
COMPANY

ORANGE
NEW JERSEY

•

CELLULOSE
PURIFICATION

Weyerhaeuser Exhibit New Picture

The premier showing of the Weyerhaeuser Timber Company's new sound moving picture was held Thursday evening, January 6th at the Lakewood Community Theater, Tacoma, before approximately 400 invited guests.

Prepared under the supervision of Roderic Olzendam of the Weyerhaeuser Timber Company, "Trees and Men," effectively presents the forests industries of the Pacific Northwest, the spirit of the men working in these industries and their interest in the perpetuation of the region's forests as a permanent source of wood for the various industries who use it as a raw material.

The picture, which was heartily appreciated and applauded by those present, starts with the life of the men in the woods, shows the logging of the Northwest's big timber, sawmilling and pulp manufacturing.

It will be shown before various organiations not only in the Pacific Northwest but throughout the entire country.

Foley in Florida

Harold S. Foley, executive vice-president of Powell River Company, is one of those fortunate newsprint men who has more than a vacation motive in going to Florida for the winter. His family home is there; in fact, the town is named after his family—Foley, Fla. He left Vancouver head office early in December and is not expected back on the coast until early in February. By that time most of Vancouver's fog will probably have gone, and prospects of snow will be practically nil.

Puget Sound Listed On New York Curb

The common stock of the Puget Sound Pulp & Timber Company was admitted for listing early in January by the New York Curb Exchange.

B. C. Pulp and Paper Not Affected by Proposed Pact

While lumbermen and representatives of other primary industries in British Columbia were worrying about the proposed Anglo-American trade agreement which seemed certain to curtail the market they have been enjoying during the last five years in the United Kingdom, pulp and paper manufacturers had the consolation of knowing that whatever happened they wouldn't be hurt.

There is no duty on pulp and paper in the United States or Great Britain. The two commodities are comparatively free of tariff restraint everywhere, because the countries that produce them invariably have an exportable surplus and do not wish to discourage foreign sales, while the countries that do not produce regard them as such imperative imports that they remove all customs barriers.

New Zealand Mill To Start Mid 1938

The Whakatene Paper Mills, Ltd., recently announced its intention to commence operations before June 30, 1938. This mill, which is located in Auckland Province in the North Island, will be the second paper establishment in New Zealand. Its financial statement, just issued, states that the erection of a £500,000 (Pound Sterling equals $4.9803 United States currency) pulp and paper plant is well under way. (American Consulate General, Wellington.)

This kraft pulp paper and board mill was designed by L. A. DeGuere of Wisconsin Rapids, Wisconsin and is being constructed under the supervision of Mr. DeGuere and his New Zealand partner R. P. Worley of Auckland, the firm name being DeGuere and Worley.

Third Japanese Concern Plans to Use B. C. Wood

A prominent Japanese cotton spinning company has announced its intention to organize an indepedent importing company as a means of being assured a constant source of supply of wood for the manufacture of wood pulp, eventually to be utilized in the manufacture of its products, according to press reports. The new company will be known as the Canada Industrial Company and will be capitalized at 3,000,000 Yen (Yen = $0.2913 United States currency), the capital to be furnished by the textile company and other persons connected therewith.

It will be noted that this is the third Japanese concern which plans to engage in the manufacture of wood pulp in Japan from imported Canadian wood. The other two concerns are paper manufacturing companies which will manufacture the wood pulp for their own account. The Canada Industrial Company will not only produce wood pulp for its own use, but will sell to other concerns. (Office of the American Commercial Attache, Tokyo.)

SALT TRONA CAKE

SODA TRONA ASH

SALT CAKE—98+% Sodium Sulphate
SODA ASH—99½% Sodium Carbonate

Made in One of the West's Largest Industrial Plants for Western Pulp Mills

American Potash & Chemical Corporation

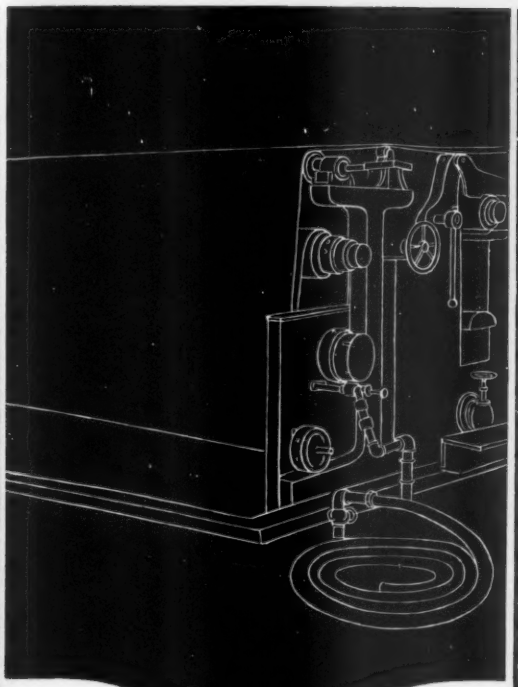
Western Office
609 So. Grand Ave., Los Angeles

Plant at Trona, Calif.

Eastern Office
70 Pine St., New York

Manufacturers of Trona Brand Muriate of Potash, Three Elephant Borax and Boric Acid

342130



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It's not only the superiority of the felt itself that has earned Orr its enviable reputation. It is also the ability of Orr representatives to select the right felt for the job.

Such ability, of course, comes only with experience . . . the kind of experience gained through years of contact with mill men and their problems . . . the kind that may be of help to you.

When the Orr representative calls, don't hesitate to discuss your felting problems. A bit of advice might save you thousands of dollars annually.

Pacific Coast Representative: WALTER S. HODGES
Pacific Bldg., Portland, Oregon

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PIQUA, OHIO

ORR FELTS

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Paper Dyes

DYES FOR COLORED NEWSPRINT

Pink and Peach

National Safranine AP Conc.
Chrysoidine YP Conc. New
Chrysoidine RP Extra

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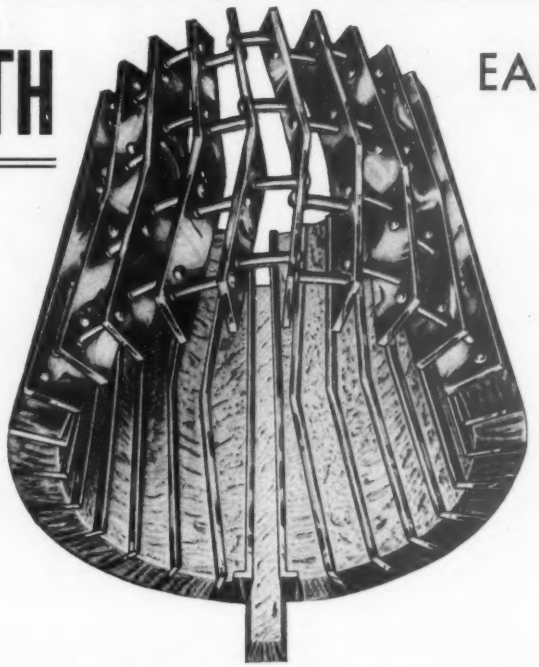

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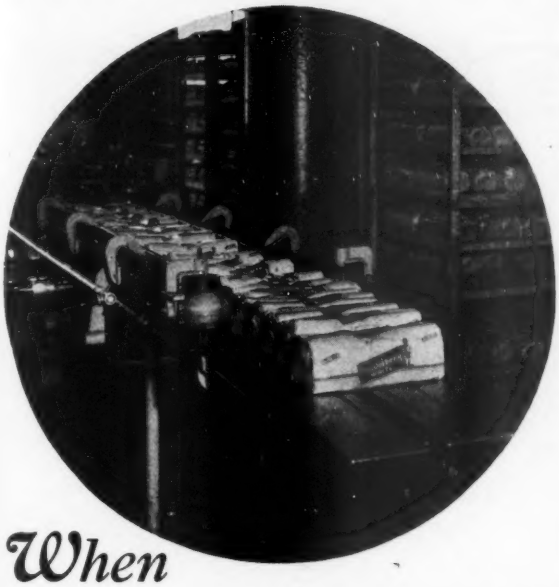

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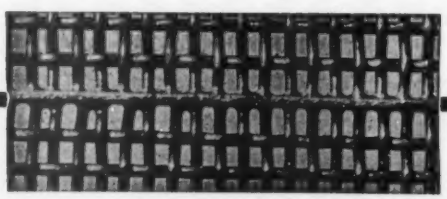

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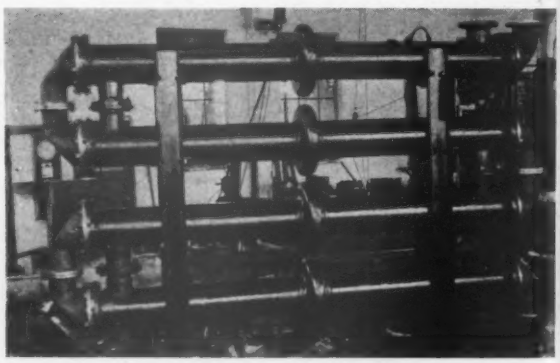

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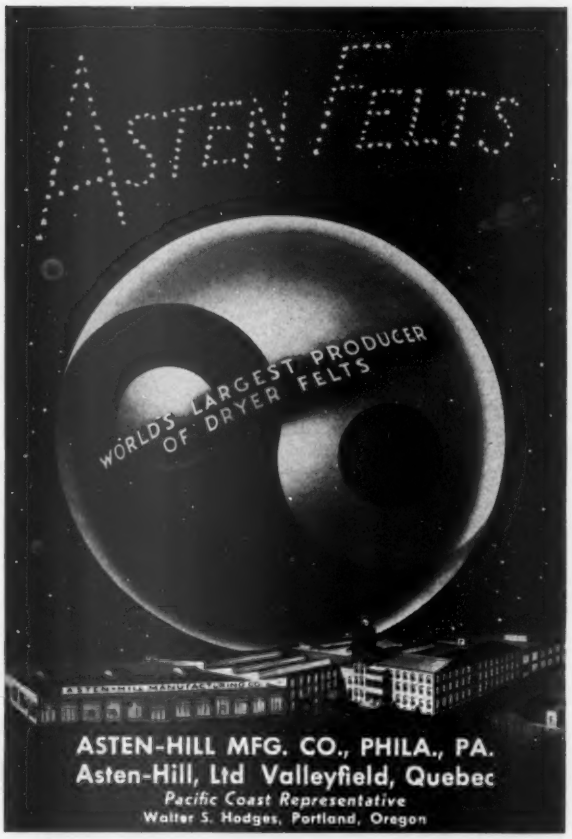

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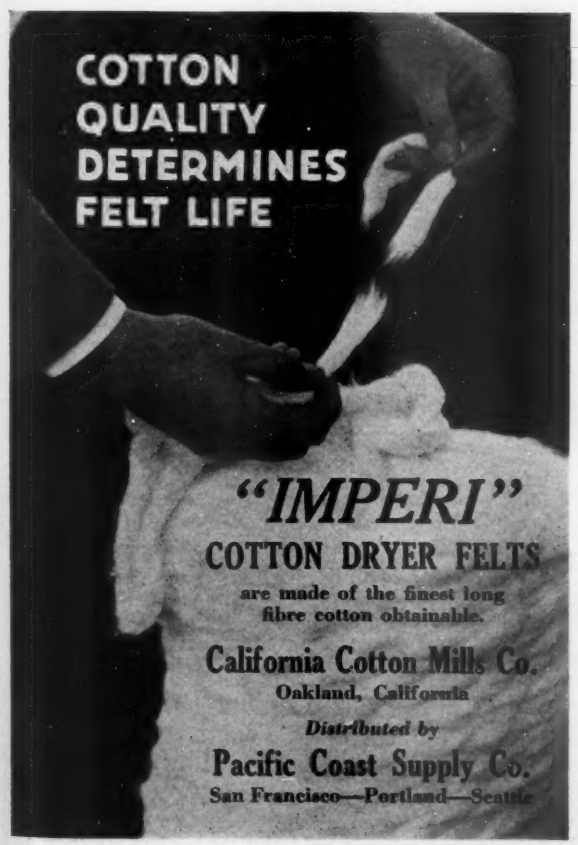

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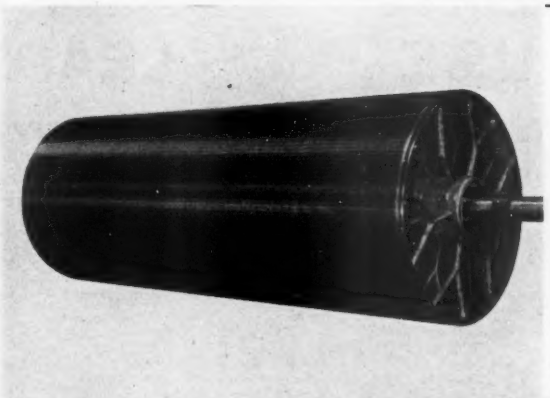

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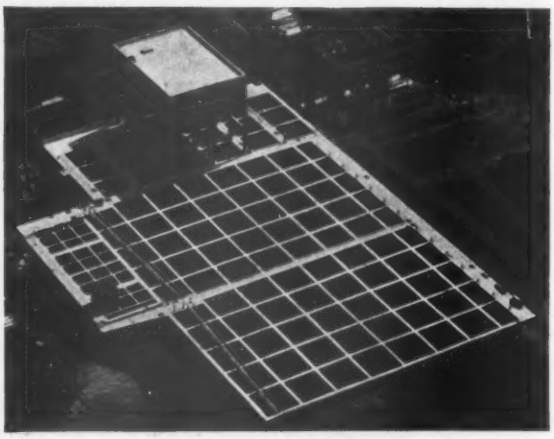

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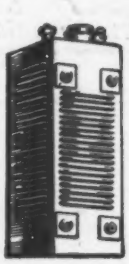

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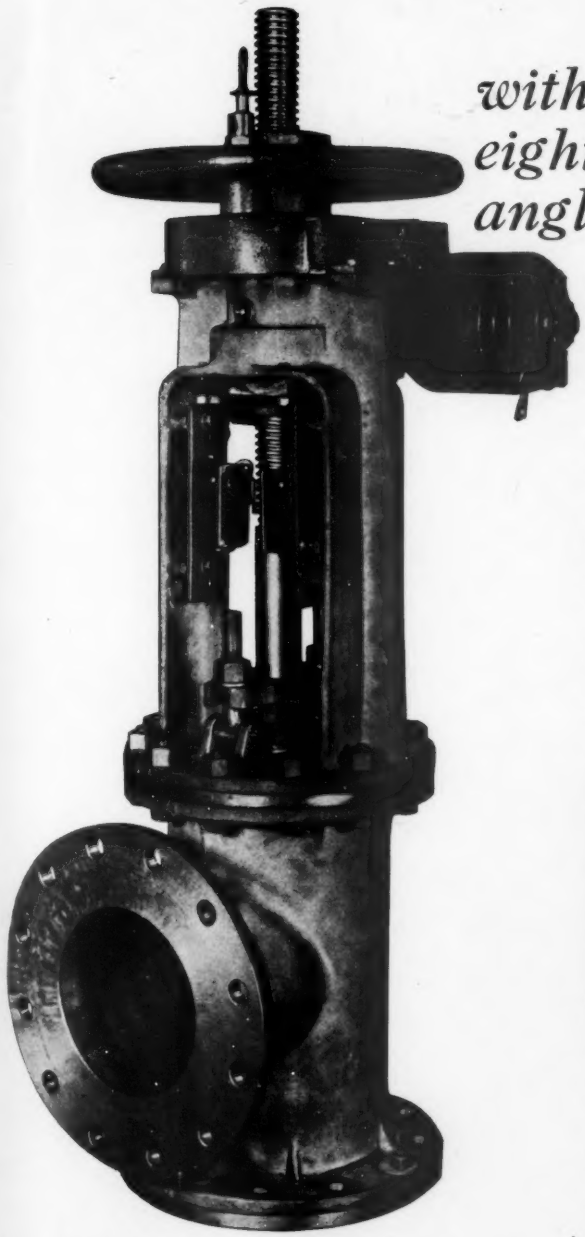

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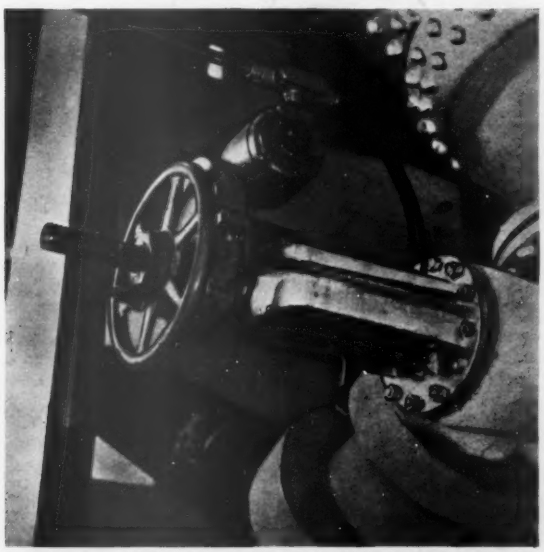

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